R668.1 B67

BLUE BOOK

1943

for manufacturers and distributors of

SOAPS
INSECTICIDES
DISINFECTANTS
CHEMICAL SPECIALTIES
SANITARY SUPPLIES
POLISHES
CLEANERS

Issued Annually by the Publishers of

SOAP AND SANITARY CHEMICALS

NEW YORK

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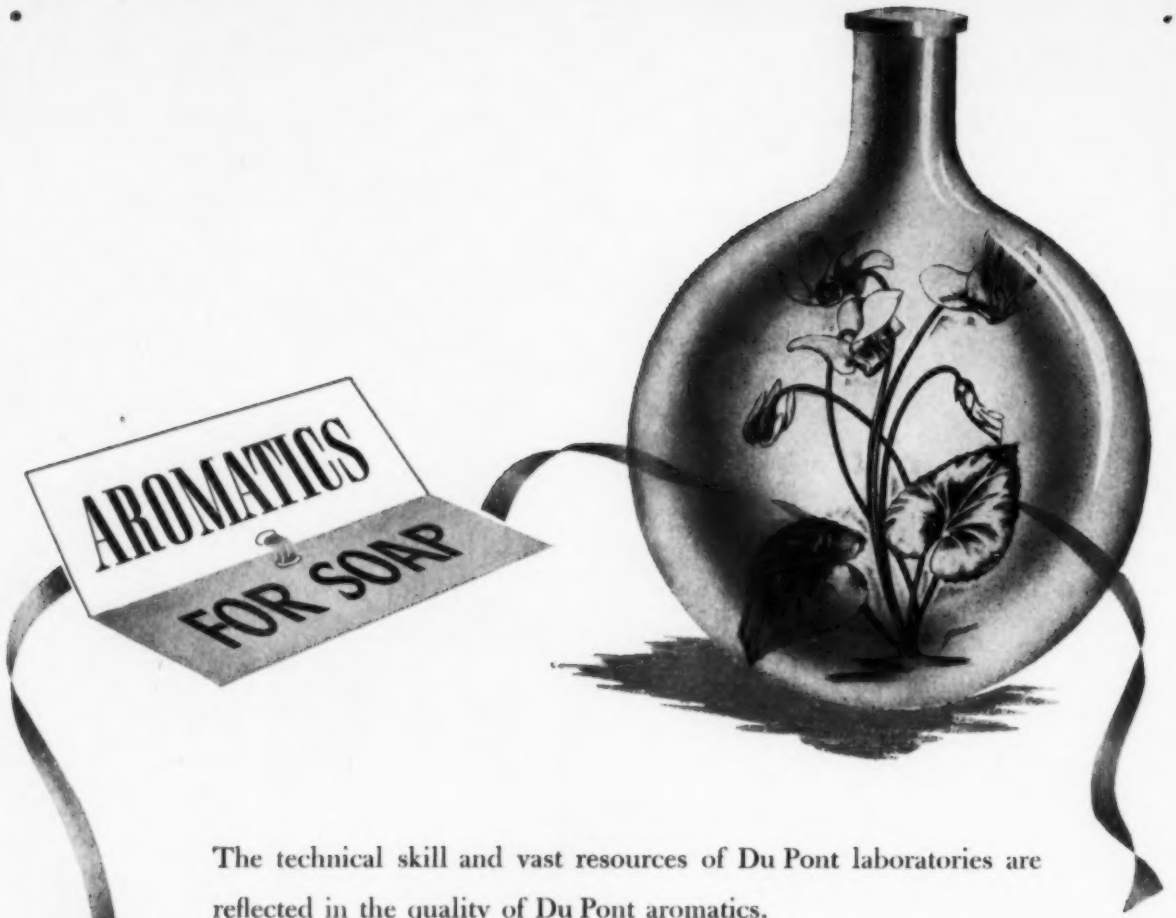

The technical skill and vast resources of Du Pont laboratories are reflected in the quality of Du Pont aromatics.

You can depend on their uniformity, purity and maximum odor value in the production of soaps, disinfectants and similar products.

PARTIAL LIST OF DU PONT AROMATICS FOR SOAP MANUFACTURERS

Alcohol C-8
Alcohol C-10
Alcohol C-12
Alpine Violet (Cyclamen Aldehyde)
Amyl Salicylate
Anisic Alcohol
Anisyl Acetate
Aubepine Liquid (Anisic Andehyde)
Benzyl Acetate
Benzyl Alcohol
Benzyl Benzoate
Bergamot Artificial
Camphene
Cedrol
Cinnamic Aldehyde
Citronellol Extra
Coumarin
Dimethyl Anthranilate
Dimethyl Hydroquinone
Dipentine
Geraniol
Geranium Artificial
Geranyl Acetate
Hyacylene P and S (Dimethyl Acetal of Phenyl Acetaldehyde)
Indole
Iso Amyl Benzyl Ether
Isoborneol
Isobornyl Acetate
Isopulegol Acetate
Isopulegol
Methyl Anthranilate
Methyl Naphthyl Ketone
Methyl Rhodione
Mugol (Dimethyl Acetal of Hydroxycitronellal)
Musk Xylol
Para Cresol Methyl Ether
Rhodione
Skatole
Terpineol
Terpinolene
Terpinyl Acetate
Terpinyl Propionate
Violet Ketone

DU PONT

Aromatics

E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Wilmington, Delaware. In New York, 40 Worth Street; in Chicago, 7 South Dearborn Street.

BLUE BOOK

1943

AN ANNUAL BUYERS GUIDE,
DIRECTORY AND REFERENCE
VOLUME FOR MANUFACTURERS
AND DISTRIBUTORS OF SOAPS,
INSECTICIDES, DISINFECTANTS,
POLISHES, CLEANERS AND
ALLIED CHEMICAL SPECIALTIES

Fifteenth Edition

ISSUED ANNUALLY BY

MacNair-Dorland Company

254 West 31st Street New York, N. Y.

JUL 23 '43

SRG68.1 SG7
1943 c.1

MEMO

To manufacturers of soaps, insecticides and disinfectants, Orbis Products Corporation is a recognized source for perfume compounds, fine American and European essential oils, aromatic chemicals and gums — whole or powdered.

Samples cheerfully furnished

ORBIS ESSENTIAL OILS

Oil Bay
Oil Cedarleaf
Oil Cedarwood
Oil Citronella Ceylon
Oil Citronella Java
Oil Cloves
Oil Eucalyptus
Oil Lemon
Oil Lemongrass
Oil Orange
Oil Patchouly
Oil Peppermint
Oil Petitgrain
Oil Rosemary
Oil Sassafras Natural
Oil Spearmint
Oil Thyme—Red
Oil Thyme—White
Oil Wormseed

ORBIS AROMATIC CHEMICALS

Anethol
Carvacrol
Citral
Eucalyptol
Eugenol
Isoeugenol
Geraniol
Phellandrene
Safrol
Thymol
Chlorthymol

ORBIS PERFUME COMPOUNDS

For soap
" para
" fly sprays
" insecticides
" sanitary specialties
" paint

ORBIS GUMS

Arabic
Karaya
Tragacanth

ORBIS

PRODUCTS CORPORATION

215 PEARL STREET, NEW YORK - FACTORY & LABORATORY, NEWARK, N.J.

CHICAGO
660 North Dearborn St.

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610 Brown Building

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MEMPHIS, TENN.
1620 Carr Ave.

Water Soluble Gums	Waxes	Cosmetic Raw Material	Fruit Flavors
Filter Paper	Stearic Acid	Oleo Resins	Food Colors
Aromatics	Essential Oils	Perfume Bases	Quince Seed
Rice Starch	Zinc Oxide French	Olive Oil	Irish Moss

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Foreword

THE effects of war on the supply situation have made dependable buying information more important today than ever before. With accustomed sources often out of stocks of raw materials, equipment, containers, etc., it is most important to have ready access to dependable information as to other possible suppliers.

In the Buyers' Guide listings of the BLUE BOOK we have placed particular emphasis on listing only first hand suppliers, and have attempted wherever possible to eliminate listings of other than first hands. In some few cases where it seemed desirable to depart from this rule, we have listed a limited number of representative resellers, but in the main the listings have been restricted to manufacturers and their direct agents.

If you are not fully listed in this edition of the BLUE BOOK, we regret this as much as you do. No one was purposely overlooked, and of course listings are never withheld because a firm is not an advertiser. Non-advertisers are listed in light face type and advertisers in bold face type.

A special explanatory note may be necessary on the listings of suppliers of finished products,—bulk and private brand soaps, and sanitary products. The BLUE BOOK listings are not **complete** lists of all manufacturers of such finished products, but are planned to be limited only to the names of firms specializing in bulk and private brand sales. Wherever possible we have eliminated from the listings the names of manufacturers whose primary concern is the sale of such products direct to users.

If your listings are incomplete, write now for a questionnaire, so that you will be fully listed in next year's BLUE BOOK.

THE PUBLISHERS.

March 15, 1943.

McCormick Insecticides

These packaged products are offered subject to availability of supplies, and to wartime restrictions on the sale of pyrethrum, rotenone and other essential ingredients.

BEE BRAND INSECT SPRAY: An excellent spray, highly effective against flies, mosquitoes and other household insects.

BEE BRAND INSECT POWDER: Pure, finely ground pyrethrum powder for household use, or for mixing horticultural dusts.

BEE BRAND INSECTICIDAL SHAMPOO: Kills fleas and lice on dogs and cats—head lice and crab lice on humans.

BEE BRAND FLEA POWDER: Active derris derivatives with a clay base, for control of fleas and lice on animals.

BEE BRAND ANT POWDER: A specially compounded derris powder for control of garden ants and certain other insects.

BEE BRAND ROACH POWDER: Highly effective for household and institutional use. To be used only as directed on package.

BEE BRAND WARBLE FLY TREATMENT: A specially compounded derris powder for treatment of Warble or Heel Flies on cattle.

BEE BRAND DISINFECTANT: A highly efficient disinfectant, deodorant and fungicide. Phenol coefficient — 8 F. D. A. method.

RED ARROW GARDEN SPRAY: A special wartime synthetic — made from non-restricted materials. Label lists insects it kills.

"SPECIAL" RED ARROW SPRAY: An extra-high-powered pyrethrum spray for Japanese Beetles, Leaf Tyers and Leaf Rollers.

The McCormick Sales Co.

BALTIMORE, MARYLAND

Buyers' Guide Section

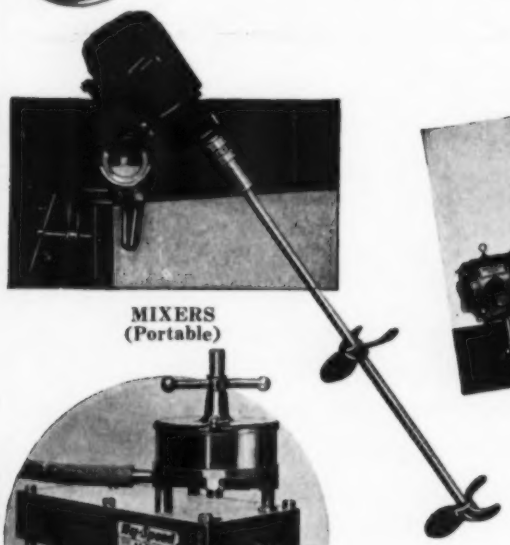
LISTING SOURCES OF SUPPLY FOR RAW MATERIALS, MACHINERY AND EQUIPMENT BOUGHT BY MANUFACTURERS OF SOAPS AND SANITARY CHEMICALS.

●

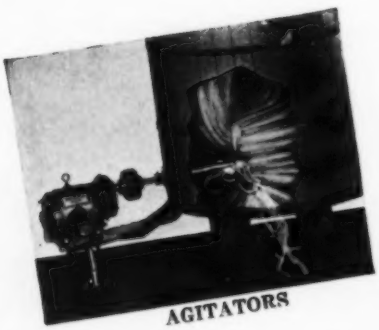
Included in this section are the names of manufacturers of soaps and sanitary chemicals who sell private brand and bulk products to jobbers and distributors. It is not intended to list concerns who sell direct to consumers.

Alsop Hy-Speed MIXERS and FILTERS

for the SOAP and ALLIED CHEMICAL INDUSTRIES

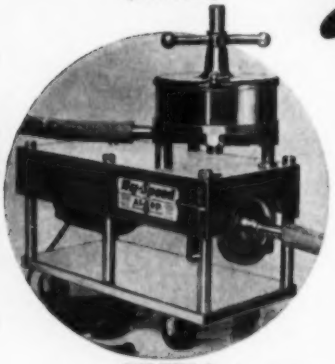


MIXERS
(Portable)



AGITATORS

MIXER and TANK



FILTERS
(Portable)

FILTERS
(Pipe Line Connected)

We have it!

If you must Agitate or Mix your liquids; or Filter them to remove dirt, impurities, or other foreign matter, we have the right equipment to do these things to achieve the best possible results.

Cat. 941 or our engineering staff is at your service for any problem of

AGITATION
MIXING
FILTRATION

ALSOP ENGINEERING CORP.
6 LIBERTY STREET MILLDALE, CONN.

ABRASIVES AND FILLERS (Pumice, Silica, Feldspar, Clays, etc.)

American Colloid Co., 363 W. Superior St., Chicago
Aluminum Co. of America, Gulf Bldg., Pittsburgh, Pa.
California Industrial Minerals Co., Friant, Calif.
Chas. B. Chrystal Co., 16 Hudson St., N. Y.
Dicalite Co., 120 Wall St., N. Y.
A. C. Drury & Co., 219 E. North Water St., Chicago
K. F. Griffiths Co., 110 E. 42nd St., N. Y.
Goris & Arnstein, 1207 W. 37th St., Chicago
Hammill & Gillespie, 225 Broadway, N. Y.
Johns-Manville, 22 E. 40th St., N. Y.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Nature Minerals Co., 108 W. 6th St., Los Angeles
Philadelphia Quartz Co., 125 S. 3rd St., Phila.
Pumice Corp. of America, Grants, N. M.
Jas. H. Rhodes & Co., 157 W. Hubbard St., Chicago
Wm. R. Rogers, 44 Woodman St., Lynn, Mass.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
F. E. Schundler & Co., Inc., 524 Railroad St., Joliet, Ill.
A. E. Starkie, 5461 W. Division St., Chicago
Tamms Silica Co., 229 N. La Salle St., Chicago
Whittaker Clark & Daniels, 260 W. B'way, N. Y.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.

ACETONE

(see also Dealers)

Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Cliffs-Dow Chemical Co., Marquette, Mich.
Commercial Solvents Corp., Terre Haute, Ind.
E. I. Du Pont de Nemours, Wilmington, Del.
Wm. S. Gray & Co., 342 Madison Ave., N. Y.
R. W. Greeff & Co., 10 Rockefeller Plaza, N. Y.
Publicker Commercial Alcohol Co., 260 E. Broad St., Phila.
U. S. Industrial Chem., Inc., 60 E. 42nd St., N. Y.

ACIDS (Sulfuric, Muriatic, Nitric, Acetic, Etc.)

(see also Dealers)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Atlas Powder Co., Wilmington, Del.
Blockson Chem. Co., Joliet, Ill.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.
Hercules Powder Co., Wilmington, Del.
Hooker Electrochemical Co., Niagara Falls, N. Y. (Muriatic)
Innis, Speiden & Co., 117 Liberty St., N. Y.
Monsanto Chemical Works, 1724 S. 2nd St., St. Louis
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Victor Chemical Wks., 141 W. Jackson Blvd., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

ACTIVATED CARBONS, see BLEACHING EARTHS, DECOLORIZING CARBONS

ADHESIVES

Arabol Mfg. Co., 110 E. 42nd St., N. Y.
Armour Glue Wks., 1355 W. 31st St., Chicago
Casein Co. of America, Bainbridge, N. Y.
Dennison Mfg. Co., Framingham, Mass.
Diamond Alkali Co., Standard Silicate Div., 535 Smithfield St., Pittsburgh
E. I. Du Pont de Nemours & Co., Wilmington, Del.
W. H. Gage Glue Co., 19 S. Main St., St. Louis
General Chemical Co., 40 Rector St., N. Y.
Hercules Powder Co, Wilmington, Del.
Mechling Bros. Chemical Co., Camden, N. J.
National Adhesives Corp., 822 Greenwich St., N. Y.
National Oil Products Co., Harrison, N. J.
Philadelphia Quartz Co., 125 S. 3rd St., Philadelphia
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Sanford Mfg. Co., W. Congress & Peoria St., Chicago
A. E. Staley Mfg. Co., Decatur, Ill.
Stein, Hall & Co., 285 Madison Ave., N. Y.
Swift & Co., Chicago

AGITATORS

Alsop Engineering Corp., Milldale, Conn.
Beach-Russ Co., 50 Church St., N. Y.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
Eastern Engineering Corp., 45 Fox St., New Haven, Conn.
Ertel Engineering Corp., Kingston, N. Y.
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Foster Pump Works, 50 Washington St., Brooklyn
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259 46th St., Brooklyn
J. M. Lehmann Co., 248 Broadway, N. Y.
Littleford Bros., 443 E. Pearl St., Cincinnati
Mixing Equipment Co., Inc., 1067 Garson Ave. Rochester, N. Y.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago, Ill. (Used)
Pfaudler Co., 89 East Ave., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Read Machy. Co., York, Pa.
Scientific Filter Co., 1 Franklin Sq., N. Y.
Ernest Scott & Co., P. O. Box 82, Fall River, Mass.
Sowers Mfg. Co., 1296 Niagara St., Buffalo
Sprout Waldron & Co., Muncy, Pa.
Stein Equipment Corp., 426 Broome St., N. Y. C. (Used)
Struthers-Wells Titusville Corp., Warren, Pa.

AGRICULTURAL INSECTICIDES

Agicide Laboratories, 1717 Taylor Ave., Racine, Wis.
Aluminum Co. of America, Gulf Bldg., Pittsburgh
American Agricultural Chem. Co., 50 Church St., N. Y.
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Calif.
Ansbacher-Siegle Corp., Rosebank, S. I.
Bowker Chemical Co., 50 Church St., N. Y.
California Spray Chemical Corp., Richmond, Calif.
Carbide & Carbon Chem. Corp., 30 E. 42nd St., N. Y.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chipman Chemical Co., Bound Brook, N. J.
Dodge & Olcott Co., 180 Varick St., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Fuld Bros., Baltimore
General Chem. Co., 40 Rector St., N. Y.
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Hooker Electrochemical Co., Niagara Falls, N. Y.
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
McLaughlin, Gormley King Co., 1715—5th St., S. E. Minneapolis
Mechling Bros. Chemical Co., Camden, N. J.
Peck's Products Co., 5240 N. 2nd St., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Richards Sales Corp., Warren & Morris Sts., Jersey City, N. J.
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Schaeffer Bros. & Powell Mfg. Co., 102 Barton St., St. Louis, Mo.
Sherwin-Williams Co., 292 Madison Ave., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Thompson-Hayward Chem. Co., Kansas City, Mo.
Tobacco By-Products & Chem. Corp., Louisville, Ky.
Velsicol Corp., 120 E. Pearson St., Chicago
White Tar Co. of N. J., Belleville Turnpike, Kearney, N. J.
Whitmire Research Corp., 339 S. Vandeventer, St. Louis
Woburn Degreasing Co. of N. J., Harrison, N. J.
York Chem. Co., 424 W. 18th St., N. Y.

KAY FRIES
CHEMICALS INC.

Office:
180 Madison Avenue
New York, N. Y.

Plant:
West Haverstraw, N. Y.

ORGANIC AND AROMATIC CHEMICALS

for Soaps, Perfumes, Drugs and Pharmaceuticals, Cosmetics, Denaturing, Insecticides, Fumigation and other purposes

Phenyl Ethyl Alcohol
Phenyl Ethyl Acetate
Phenyl Ethyl Salicylate

Benzyl Acetate
Benzyl Alcohol
Benzyl Benzoate
Ethyl Benzoate

Diethyl Phthalate
Dimethyl Phthalate
Dibutyl Phthalate

Yara Yara
(Beta-Naphthol Methyl Ether)
Cyanacetamide

Benzophenone
Acetophenone
Methyl Acetophenone

Phenyl Acetic Acid
Methyl Phenyl Acetate
Ethyl Phenyl Acetate
Amyl Phenyl Acetate

Alpha Amyl Cinnamic Aldehyde
Methyl Formate
Ethyl Formate
Triethyl Orthoformate

Nerolin
(Beta-Naphthol Ethyl Ether)
Triacetin

PENETROL

A NEUTRAL BASE FOR PYRETHRUM AND ROTENONE PLANT SPRAYS. MIXES EASILY WITH HARD COLD WATER. FORMULAE AND DATA AVAILABLE.

CRESYLIC ACID
AMMONIUM CARBONATE
CAUSTIC SODA
SODA ASH

U. S. P. FORMALDEHYDE

Sole Selling Agents

American-British Chemical Supplies, Inc.

180 MADISON AVENUE, NEW YORK CITY
Telephone—AShland 4-2265
Cable Address—Bisulphide, New York City

Associated Companies:

CHARLES TENNANT & COMPANY (CANADA) LTD.
137 Wellington Street West, Toronto, 2, Canada

CHARLES TENNANT & CO., LTD.
Glasgow, Scotland

BARTER TRADING CORP., LTD.
London, England

AGRICULTURAL INSECTICIDE SPREADERS

American Colloid Co., 363 W. Superior St., Chicago
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Ansbacher-Siegle Corp., Rosebank, S. I.
Atlantic Refining Co., 260 South Broad St., Phila.
Atlas Powder Co., Wilmington, Del.
California Industrial Minerals Co., Friant, Calif.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Dicalite Co., 120 Wall St., N. Y.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Kay-Fries Chemicals, Inc., 180 Madison Ave., N. Y.
National Oil Products Co., Harrison, N. J.
Richards Sales Corp., Jersey City, N. J.
Rohm & Haas Co., 222 W. Washington Sq., Phila.

ALCOHOL (Ethyl and Denatured)

(see also Dealers)

American Coml. Alcohol Corp., 405 Lexington Ave., N. Y.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Commerce Petroleum Co., 2923 S. Lock Ave., Chicago
Commercial Solvents Corp., Terre Haute, Ind.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Hercules Powder Co., Wilmington, Del.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Pennsylvania Sugar Co., 139 S. 3rd St., Phila.
Publicker Commercial Alcohol Co., 260 E. Broad St., Phila.
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.

ALCOHOL (Methyl or Wood) (See also METHANOL, SYNTHETIC)

Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Cliffs-Dow Chemical Co., Marquette, Mich.
E. W. Colledge, General Sales Agent, Inc., P. O. Box 389, Jacksonville, Fla.
Commercial Solvents Corp., Terre Haute, Ind.
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Hercules Powder Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Publicker Commercial Alcohol Co., Philadelphia
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.
Wood Products Co., Buffalo, N. Y.

(see also Dealers)

ALCOHOL, ISO-PROPYL

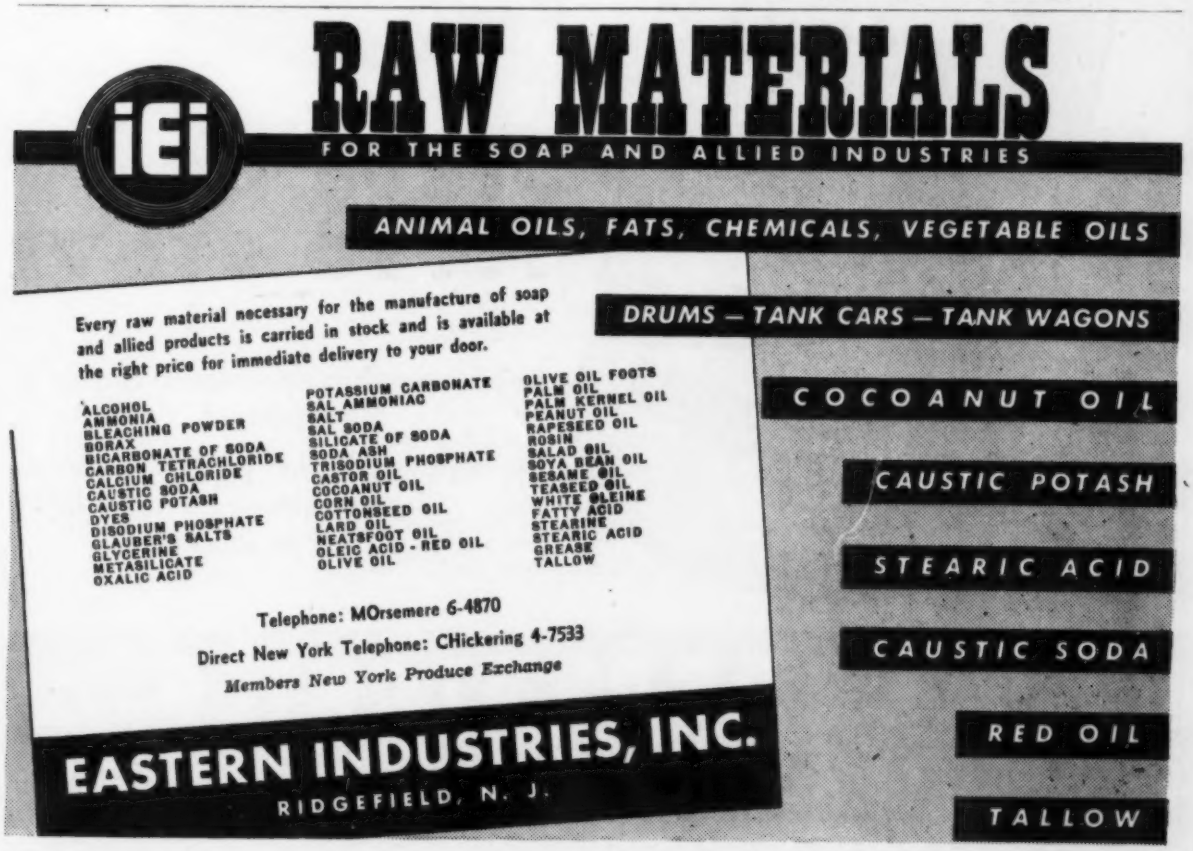
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Standard Alcohol Co., 26 Bway., N. Y.
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.

ALKALIES (see CAUSTIC SODA, SODA ASH, CAUSTIC POTASH, etc.)

ALUMINUM CHIPS (for Drain Solvent)

Aluminum Co. of Amer., Gulf Bldg., Pittsburgh
Belmont Smelting & Ref. Co., 318 Belmont Ave., Bklyn., N. Y.
Reynolds Metals Co., 19 Rector St., N. Y.

ALUMINUM STEARATE (see STEARATES)



No More AMMONIA

COLE SOLV

Steps in ...TO STAY!

Does everything Ammonia can do — but SMELL!

For household and general cleaning uses. Clear or cloudy. Private label on orders of 5 gross or more.

COLE LABORATORIES

22-14—37th Avenue Long Island City, N. Y.

ALUMS

(see also Dealers)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Armour Ammonia Wks., 1355 W. 31st St., Chicago
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Hercules Powder Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Merck & Co., Rahway, N. J.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila. (Ammonia)
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
E. M. Sergeant Pulp & Chem. Co., Empire State Bldg., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

AMALGAMATORS (see SOAP MACHINERY)

AMINOHYDROXY COMPOUNDS

Commercial Solvents Corp., Terre Haute, Ind.

AMMONIA, HOUSEHOLD (see HOUSEHOLD AMMONIA)

AMMONIA WATER

(see also Dealers)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Barrett Co., 40 Rector St., N. Y.
Cole Laboratories, 22-14—37th Ave., Long Island City, N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eastern Inds., Ridgefield, N. J.
General Chemical Co., 40 Rector St., N. Y.
Mallinckrodt Chem. Wks., St. Louis
Mathieson Alkali Works, 60 E. 42nd St., N. Y.
Merck & Co., Rahway, N. J.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

AMMONIUM BI-FLUORIDE (see FLUORIDES)

AMMONIUM CARBONATE

(see also Dealers)

American-British Chm. Supplies, Inc., 180 Madison Ave., N. Y.
American Agricultural Chem. Co., 50 Church St., N. Y.
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

AMMONIUM CHLORIDE

American Cyanamid & Chem. Co., 30 Rockefeller Plaza, N. Y.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.

ESTABLISHED 1914

ESSENTIAL OILS AROMATIC CHEMICALS
PERFUME COMPOUNDS

For Soaps, Shampoos, Sanitary Products

YLANG ARTIFICIAL

Replaces entirely, or in part, the natural oil.
An effective reproduction at a low price.

BENJ. FRENCH, INC.

160 Fifth Avenue New York

AROMATICS PRODUCED TO PRECISE STANDARDS

MASS PRODUCTION of delicately balanced chemical materials is a Dow achievement of long standing. This experience, spanning a period of more than fifty years, is now proving of special value in the creation and production of synthetic aromatic chemicals.

Assisted by the extensive facilities which Dow's research staff has to offer, a selected group of specialists is now concentrating on the further development of these valuable products. Naturally, the availability of some of these materials is affected by the war program. But Dow assures the trade the utmost cooperation.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York City • St. Louis • Chicago • Houston • San Francisco • Los Angeles • Seattle

Synthetic
AROMATICS

Methyl Anthranilate, Diphenyl Oxide, Indol, Diphenyl Methane, Methyl Phenyl Carbinyl Acetate, Methyl Salicylate, Styrene P-100, Coumarin, Phenyl Ethyl Alcohol

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

AMMONIUM CHLORIDE (Contd.)

Hercules Powder Co., Wilmington, Del.
Merck & Co., Rahway, N. J.
E. M. Sergeant Pulp & Chem. Co., Empire State Bldg., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
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AMYL SALICYLATE (see AROMATIC CHEMICALS)

ANISE OIL (see ESSENTIAL OILS)

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American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
American Fluoride Corp., 151 W. 19th St., N. Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Calif.
Associated Chemists, Inc., 1906 N. Halsted Ave., Chicago
Barton Chemical Co., 3907 S. Langley Ave., Chicago
Buckeye Chem. & Specialty Co., 131 E. 23rd St., N. Y.
California Spray-Chemical Corp., Richmond, Calif.
Geo. H. Conn Co., Freeport, Ill.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Cole Laboratories, 22-19—37th Ave., L. I. City, N. Y.
Delta Chem. Co., 4 Payson Ave., N. Y.
Exterminating Materials Co., 555 W. 22nd St., N. Y.
Foote Mineral Co., 1609 Summer St., Phila.
Fuld Bros., Inc., 702 S. Wolfe St., Baltimore
Hysan Products Co., 58 E. Cullerton St., Chicago
Maywood Pest Exterminators, 1413 Washington Blvd., Maywood, Ill.
John Opitz, Inc., 50-14 39th St., Long Island City, N. Y.
Pfaltz & Bauer, Inc., Empire State Bldg. N. Y.
Ore & Chemical Corp., 80 Broad St., N. Y.
Soilicide Labs., 8 Laurel Pl., Upper Montclair, N. J.
Sennewald Drug Co., Inc., 2723 Chouteau Ave., St. Louis
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Spec. Corp., 435 S Western Ave., Chicago
W-B Chemical Co., Mt. Vernon, N. Y.
York Chemical Co., 424 W. 18th St., N. Y.

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Continental Car-Na-Var Corp., Brazil, Ind.
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Higley Chem. Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
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A. C. Dru:y & Co., 219 East North Water St., Chicago
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Felton Chemical Co., 603 Johnson Ave., Brooklyn
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Fuld Bros., Baltimore
General Drug Co., 644 Pacific St., Brooklyn
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Lautier Fils, Inc., 154 W. 18th St., N. Y. C.
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Geo. Lueders & Co., 427 Washington St., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
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N. Y. Aromatics Co., 153 Waverly Pl., N. Y.
Norda Essential Oil & Chem. Co., 601 W. 26th St., N. Y.
Northwestern Chemical Co., Wauwatosa, Wis.
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Pfaltz & Bauer, Inc., 350 Fifth Ave., N. Y.
Polak's Frutal Wks., Inc., 36-14—35th St., L. I. City, N. Y.
Polak & Schwarz, Inc., 667 Washington St., N. Y.
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Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Koppers Co., Koppers Bldg., Pittsburgh
McLaughlin, Gormley King Co., Minneapolis
Thompson-Hayward Chemical Co., 2915 Southwest Blvd., Kansas City, Mo.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
White Tar Co., Kearny, N. J.

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Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
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S. B. Penick & Co., 50 Church St., N. Y.
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Albert Verley, Inc., 232 E. Ohio St., Chicago

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Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
Merck & Co., Rahway, N. J.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.
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Inland Steel Container Co., 6532 S. Menard Ave., Chicago
Master Package Corp., Owen, Wisc.
Rogers Fibre Co., 210 Lincoln St., Boston
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Manion Steel Barrel Co., Rouseville, Pa.
National Steel Barrel Co., 3860 E. 91st St., Cleveland
Niles Steel Prod. Co., Niles, Ohio
Petroleum Iron Works, Co., Sharon, Pa.
Pittsburgh Can Co., Pittsburgh
Pressed Steel Tank Co., Milwaukee, Wis.
Republic Steel Package Co., 7930 Jones Rd., Cleveland
St. Louis Steel Package Co., St. Louis
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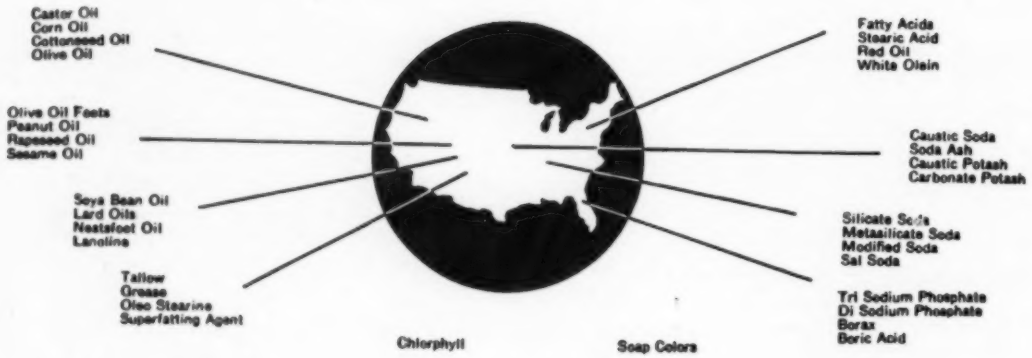

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Heyden Chem. Co., 50 Union Sq., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
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Monsanto Chemical Works, 1724 S. 2nd St., St. Louis
Orbis Products Corp., 215 Pearl St., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y.
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Diamond Alkali Co., 535 Smithfield St., Pittsburgh
Merck & Co., Rahway, N. J.
Mutual Chem. Co. of America, 270 Madison Ave., N. Y.
Natural Prods. Refining Co., Jersey City, N. J.
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Diamond Alkali Co., 535 Smithfield St., Pittsburgh
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Sodium Hypochlorite
Magnesol (*TM Reg.*)

Westvaco
CHEMICALS

WESTVACO CHLORINE PRODUCTS CORPORATION

405 LEXINGTON AVENUE • NEW YORK, N. Y.

141 W. JACKSON BLVD., CHICAGO • WOODSIDE BLDG., GREENVILLE, S. C. • NEWARK, CALIF.

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LUNING, NEV. • GUSTINE, CALIF. • LIVERMORE, CALIF. • PATTERSON, CALIF. • CHULA VISTA, CALIF.

BLEACHING AGENTS (Contd.)

Hooker Electrochemical Co., Niagara Falls, N. Y.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Lucidol Corp., 293 Larkin St., Buffalo
Mathieson Alkali Works, 60 E. 42nd St., N. Y.
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
Rohm & Haas Co., 222 W. Washington Sq., Phila.
E. M. Sergeant Pulp & Chem. Co., Empire State Bldg., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Westvaco Chlorine Prods. Co., Chrysler Bldg., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

BLEACHING EARTHS and CARBONS (see also CLAYS)

American Colloid Co., 363 W. Superior St., Chicago
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Attapulgus Clay Co., 260 So. Broad St., Phila.
Chas. B. Chrystal Co., 16 Hudson St., N. Y.
Dicalite Co., 120 Wall St., N. Y
Filtrol Corp., 634 S. Spring St., Los Angeles
Hammil & Gillespie, 225 Broadway, N. Y.
J. M. Huber, Inc., 460 W. 34th St., N. Y.
Illinois Silica Co., Cairo, Ill.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Peerless Clay & Mineral Co., Pueblo, Colo.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
Sinclair Refining Co., East Chicago, Ind.
A. E. Starkie Co., 5461 W. Division St., Chicago
Tamms Silica Co., 228 N. LaSalle St., Chicago
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.
Wyodak Chem. Co., 4600 E. 71st St., Cleveland

BLEACHING EQUIPMENT (for Oils), (see DEODORIZING EQUIPMENT)

BLEACHING POWDER (Chloride of Lime)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Diversey Corp., 53 W. Jackson Blvd., Chicago
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Hooker Electrochemical Co., Niagara Falls, N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Alkali Works, 60 E. 42nd St., N. Y.
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
E. M. Sergeant Pulp & Chem. Co., Empire State Bldg., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

BLOCK HOLDERS (see HOLDERS, DEODORIZING BLOCK)

BLOWERS for POWDER INSECTICIDES (see BELLOWS)

BLOWERS, ELECTRIC (see SPRAYERS, ELECTRIC)

BLUING (see LAUNDRY BLUE)

BOILER COMPOUNDS

American Colloid Corp., 15 E. 26th St., N. Y.
Ampion Corp., 47-02 5th St., Long Island City, N. Y.
Baum's Castorine Co., Rome, N. Y.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Cole Laboratories, 22-19—37th Ave., L. I. City, N. Y.
Delta Chem. Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Goulard & Olena, Inc., 140 Liberty St., N. Y.
Hercules Chem. Co., 332 Canal St., N. Y.
Higley Chem. Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
Hysan Prods Co., 58 E. Cullerton St., Chicago
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Mathieson Alkali Works, 60 E. 42nd St., N. Y.
Palmer Products Co., Waukesha, Wisc.
Peck's Products Co., St. Louis
Permutit Co., 330 W. 42nd St., N. Y.
Reilly Tar & Chemical Corp., Indianapolis, Ind.
Richards Sales Corp., Jersey City, N. J.
Theo. B. Robertson Prods. Co., 700 Division St., Chicago
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
John Sunshine Chem. Co., 604 W. Lake St., Chicago
Trojan Products & Mfg. Co., 3107 S. Wabash Ave., Chicago
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

BOIS de ROSE OIL (see ESSENTIAL OILS)

BORAX

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
American Potash & Chem. Corp., 233 Broadway, N. Y.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
Pacific Coast Borax Co., 51 Madison Ave., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.

BOTTLES

American Bottle Co., Toledo, O.
Armstrong Cork Co., Lancaster, Pa.
Anchor Hocking Glass Corp., Lancaster, Ohio
Capstan Glass Co., Connelsville, Pa.
Foster-Forbes Glass Co., Marion, Ind.
Graham Glass Co., Evansville, Ind.
Hazel Atlas Glass Co., Wheeling, W. Va.
Kimble Glass Co., Vineland, N. J.
Maryland Glass Corp., Baltimore, Md.
Millville Bottling Wks., Millville, N. J.
Owens Illinois Glass Co., Toledo, O.
F. E. Reed Gass Co., 860 Maple St., Rochester, N. Y.
Root Glass Co., Terre Haute, Ind.
Ruth Glass Co., Conshohocken, Pa.
Tygart Valley Glass Co., Washington, Pa.
T. C. Wheaton Co., Millville, N. J.

BOTTLE FILLING MACHINERY (see FILLING MACHINERY, BOTTLES)

Fuel for the Flying Fortresses! Shipped in CROWN DRUMS!

You can't solve a fuel shortage in the Southwest Pacific by building a pipeline. Fuel for the Flying Fortresses, for the tanks, the jeeps, for all the mechanical equipment must reach the remote outposts in drums . . . and in drums that can take a drubbing.

We don't know just where the *Crown Drums* we supply to many oil companies will go. We couldn't tell you if we did. But we do know they are carrying high octane gas . . . and regular gas and oil to plenty of those places with the unpronounceable names where the Army, Navy and Marines are operating.

Just another instance of how *Crown* is helping to win the war . . . by sending its regular products to the front . . . as well as by making special products for the Army and Navy.

CROWN CAN COMPANY, New York • Philadelphia. *Division of Crown Cork and Seal Company.* Baltimore, Maryland.

★ ★ ★ ★ ★

CROWN CAN

BOTTLE WASHERS (see WASHING MACHINERY, BOTTLES)

BOX LINERS (see BAG LINERS)

BOXES (Corrugated and/or Fibre)

Brooklyn Fibre Syndicate, Decatur St. & Irving Ave., Brooklyn
Cambridge Paper Box Co., 196 Broadway, Cambridge, Mass.
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, 111 W. Washington St., Chicago
Robert Gair Co., 155 E. 44th St., N. Y.
Hinde & Dauch Paper Co., 222 Decatur St., Sandusky, O.
F. J. Kress Box Co., 2390 Liberty Ave., Pittsburgh
Owens-Illinois Glass Co., Toledo, O.
River Raisin Paper Co., Monroe, Mich.

BOXES (Fancy Paper)

Alderman-Fairchild Co., 367 Orchard St., Rochester, N. Y.
Baxter Paper Co., Brunswick, Me.
F. N. Burt Co., Ltd., 540 Seneca St., Buffalo, N. Y.
C. J. Fox Co., 236 Abron St., Providence, R. I.
Foxon Paper Co., 230 West Park St., Providence, R. I.
Robert Gair Co., 155 E. 44th St., N. Y.
Gardner-Richardson Co., Middletown, O.
R. R. Heywood, Inc., 26th St. & 9th Ave., N. Y.
R. J. Kittredge Co., 812 W. Superior St., Chicago
Pictorial Package Co., Aurora, Ill.
Piqua Paper Box Co., Piqua, O.
Potomac Lithograph Mfg. Co., Washington, D. C.
W. C. Ritchie & Co., 8801 S. Baltimore Ave., Chicago
Robert Paper Box Co., Montville, Conn.
Geo. Schmitt & Co., Grand & Florence Sts., Brooklyn
Strobridge Lithographing Co., Norwood Station, Cincinnati
Sutherland Paper Co., Kalamazoo, Mich.
U. S. Printing & Lithographing Co., Norwood, Cincinnati
Universal Folding Box Co., Monroe & 13th Sts., Hoboken, N. J.

BOXES (Fancy Wooden)

Pilliod Cabinet Co., Swanton, O.

BROKERS (Chemicals)

S. H. Bell Co., 1407 Gulf Bldg., Pittsburgh
John A. Chew, Inc., 60 E. 42nd St., N. Y.
Dickerson Co., Drexel Bldg., Phila.
Otto A. C. Hagen Co., Public Ledger Bldg., Phila.
Chas. L. Huisking & Co., 155 Varick St., N. Y.
Leo Pasternak, Inc., 110 William St., N. Y.
George Uhe, Inc., 80 Eighth Ave., N. Y.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

BROKERS (Oils and Fats)

Irving R. Boody Co., 99 Wall St., N. Y.
Davidson Commission Co., 327 S. La Salle St., Chicago
John W. Hall, 327 S. La Salle St., Chicago
Otto A. C. Hagen Co., Public Ledger Bldg., Phila.
Hentz & Co., 60 Beaver St., N. Y.
Chas. Hollingshead Co., Produce Exchange, N. Y.
Horner Commission Co., 15 William St., N. Y.
E. G. James Co., 316 S. La Salle St., Chicago
Miller & Co., 2401 Chestnut St., Philadelphia
Rayner & Stonington, Inc., 79 Wall St., N. Y.
J. H. Redding Co., 17 Battery Pl., N. Y.
Roesling, Monroe & Co., 133 Front St., N. Y.
Sterne & Son Co., Board of Trade Bldg., Chicago
Wm. M. Ware & Co., 88 Broad St., Boston
Weaver & Hugi, Inc., Produce Exchange Bldg., N. Y.
Welch, Holme & Clark Co., Inc., 563 Greenwich St., N. Y.
G. A. Wharry & Co., 95 Broad St., N. Y.
Wilbur-Ellis Co., 17 Battery Pl., N. Y.
Wilson Brokerage, Inc., Produce Exchange, N. Y.

BROOMS

Alabama Broom & Mattress Co., Huntsville, Ala.
Burdett-Rose Mfg. Co., 6100 Independence Rd., Kansas City, Mo.
Chattanooga Broom & Mop Co., Chattanooga, Tenn.
Detroit Quality Brush Mfg. Co., 5937 Michigan Ave., Detroit
Eagle Woodenware Co., Hamilton, O.
Flour City Brush Co., Minneapolis
Illinois Brush Mfg. Co., 3316 Ogden Ave., Chicago
Kendallville Brush & Broom Co., Kendallville, Ind.
Tate Mfg. Co., 67 Sudbury St., Boston, Mass.
M. J. Toohey & Co., Fall River, Mass.

BRUSHES

American Standard Mfg. Co., 2509 S. Green St., Chicago
Auburn Brush Co., Columbia, Pa.
Burdett-Rose Mfg. Co., 6100 Independence Rd., Kansas City, Mo.
Detroit Quality Brush Mfg. Co., 5937 Michigan Ave., Detroit
Jos. O. Flatt & Co., 141 Cedar St., Reading, Pa.
Flour City Brush Co., 301 Fifth Ave., So., Minneapolis
Higley Chemical Co. Dubuque, Iowa
J. I. Holcomb Co., Indianapolis
Illinois Duster & Brush Co., 1944 Webster Ave., Chicago
W. E. Kautenberg Co., P. O. Box 255, Freeport, Ill.
Kendallville Brush & Broom Co., Kendallville, Ind.
National Brush Co., Aurora, Ill.
New Jersey Brush Mfg. Co., Newton, N. J.
Opie Brush Co., Kansas City, Mo.
Ox Fibre Brush Co., Frederick, Md.
Pacific Coast Brush Co., Los Angeles
Palmer Prods., Inc., Waukesha, Wisc.
Pioneer Mfg. Co., Cleveland, O.
Sanitax Brush & Prods. Co., 230 E. Ohio St., Chicago
Silver-Chamberlin Co., Clayton, N. J.
Sullivan Brush Co., Terre Haute, Ind.
Tate Mfg. Co., 67 Sudbury St., Boston, Mass.

CAJUPUT OIL (see ESSENTIAL OILS)

CALCIUM HYPOCHLORITE

Hooker Electrochemical Co., Niagara Falls, N. Y.
Mathieson Alkali Wks., 60 E. 42nd St., N. Y.
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
Jos. Turner & Co., Ridgefield, N. J.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

CALCIUM STEARATE (see STEARATES)

CAMPHOR OIL, SASSAFRASSY (see ESSENTIAL OILS)

CAMPHOR OIL, WHITE (see ESSENTIAL OILS)

CAN FILLING MACHINERY (see FILLING MACHINERY, CANS)

Prepare Now..!

FOR BETTER POST-WAR CONTAINERS

POST-WAR packaging promises to witness the greatest changes in the history of American industry. Old materials and methods of pre-war days will give way to radically new and better ones. Markets will be captured *more quickly* by the enterprising producer and packager who, with vision and foresight, is preparing NOW the products he'll be ready to sell just as soon as the shooting has died away!

Makers of liquid products that are POURED from metal containers will capture the preference of women if their cans are equipped with BARROLL Pouring Nozzles. For these efficient spouts stop messy, wasteful spilling . . keep pouring under perfect control in a straight, even stream. And, when not in use, a sturdy, standard screw cap keeps the container tightly sealed!

Ask your can maker about BARROLL Pouring Nozzles, or, write us for samples and prices.

the ARIDOR Co.

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METAL CLOSURES FOR GLASS CONTAINERS

CANDELILLA WAX (see WAXES)

CAN SPOUTS AND NOZZLES

Anchor Hocking Glass Corp., Lancaster, Ohio
Aridor Co., 3428 W. 48th Place, Chicago
George D. Ellis & Sons, 309 N. 3rd St., Phila.
Standard Containers, Inc., Rockaway, N. J.
U-Pressit Corp., 420 Lexington Ave., N. Y.
Williams Sealing Corp., Decatur, Ill.

CANS (Fibre or Paper)

American Can Co., 230 Park Ave., N. Y.
Cambridge Box Co., 196 Broadway, Cambridge, Mass.
Canister Co., Phillipsburg, N. J.
Cin-Made Corp., 294 Eggleston Ave., Cincinnati
Cleveland Container Co., 10630 Berea Rd., Cleveland
Continental Can Co., 100 E. 42nd St., N. Y.
Cross Paper Products Co., 2595 Third Ave., N. Y.
Fonda Container Co., 41 Park Row, N. Y.
Gardner-Richardson Co., Middletown, O.
Master Package Corp., Owen, Wis.
Middlesex Paper Tube Co., 342 Madison Ave., N. Y.
Midwest Paper Container Co., 707 N. 3rd St., Minneapolis
National Paper Can Co., Cudahy, Wis.
R. C. Can Co., 121 Chambers St., St. Louis
W. C. Ritchie & Co., 8801 S. Baltimore Ave., Chicago
Sutherland Paper Co., Kalamazoo, Mich.

CANS (Sifter Top)

American Can Co., 230 Park Ave., N. Y.
Anchor Hocking Glass Corp., Lancaster, Ohio
Cambridge Paper Box Co., 196 Broadway, Cambridge, Mass.
Canister Co., Phillipsburg, N. J.
Cans, Inc., 3217 W. 47th Pl., Chicago
Cleveland Container Co., 10630 Berea Rd., Cleveland
Cin-Made Corp., 294 Eggleston Ave., Cincinnati
Continental Can Co., Inc., 100 E. 42nd St., N. Y.
Crown Can Co., Erie Ave. & H St., Phila.
Middlesex Paper Tube Co., 342 Madison Ave., N. Y.
National Can Co., 110 E. 42nd St., N. Y.
Owens-Illinois Can Co., Toledo, O.
R. C. Can Co., 121 Chambers St., St. Louis
W. C. Ritchie & Co., 8801 S. Baltimore Ave., Chicago
Sefton Fibre Can Co., 3275 Big Bend Blvd., St. Louis
Standard Container, Inc., Bloomfield, N. J.
Sutherland Paper Co., Kalamazoo, Mich.

CANS (Steel) (See PAILS, Steel)

CANS (Tin)

American Can Co., 230 Park Ave., N. Y.
Anchor Hocking Glass Corp., Lancaster, Ohio
Central Can Co., 2415 W. 19th St., Chicago
Cans, Inc., 3217 W. 47th Pl., Chicago
J. L. Clark Mfg. Co., Rockford, Ill.
Columbia Can Co, 5221 Natural Bridge Ave., St. Louis
Continental Can Co., Inc., 100 E. 42nd St., N. Y.
Crown Can Co., Erie Ave. & H St., Phila.
George D. Ellis & Sons, 309 N. 3rd St., Phila.
Fein's Tin Can Co., Bush Terminal, Brooklyn
General Can Co., 1603 S. Canal St., Chicago
Heekin Can Co., Cincinnati
National Can Co., 110 E. 42nd St., N. Y.
Owens-Illinois Can Co., Toledo, O.
Phoenix Metal Cap Co., 2444 W. 16th St., Chicago

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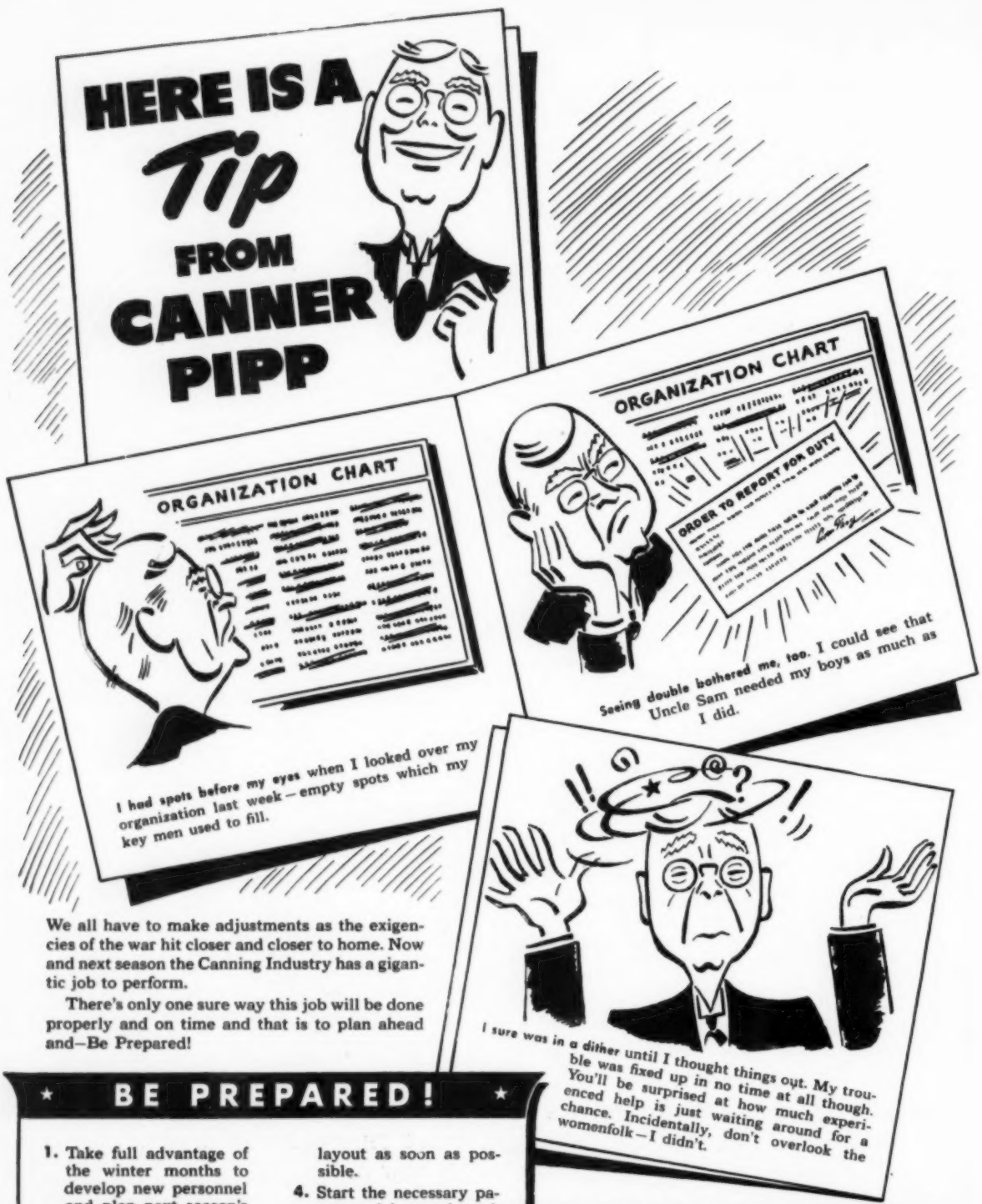
THE PUBLISHERS.


HERE IS A
Tip
FROM
CANNER
PIPP
ORGANIZATION CHART
I had spots before my eyes when I looked over my organization last week—empty spots which my key men used to fill.
ORGANIZATION CHART
ORDER TO REPORT FOR DUTY
Seeing double bothered me, too. I could see that Uncle Sam needed my boys as much as I did.
I sure was in a dither until I thought things out. My trouble was fixed up in no time at all though. You'll be surprised at how much experienced help is just waiting around for a chance. Incidentally, don't overlook the womenfolk—I didn't.

We all have to make adjustments as the exigencies of the war hit closer and closer to home. Now and next season the Canning Industry has a gigantic job to perform.

There's only one sure way this job will be done properly and on time and that is to plan ahead and—Be Prepared!

★ BE PREPARED! ★

1. Take full advantage of the winter months to develop new personnel and plan next season's requirements.
2. Repair, adjust and oil all equipment, making sure it is in perfect working order.
3. Plan on making your changes in production layout as soon as possible.
4. Start the necessary paper work in securing priorities for replacements of wornout equipment or parts. This takes time!
5. Protect your investment in your present pack. Check periodically for spoilage in the stacks.

CONTINENTAL CAN COMPANY

OFFICES AND PLANTS IN ALL PRINCIPAL CITIES

CANS (Tin) (Contd.)

W. F. Robertson Steel & Iron Co., Springfield, O.
St. Louis Can Co., 904 S. 14th St., St. Louis
Standard Container, Inc., Rockaway, N. J.

CAPPING MACHINERY

Alsop Engineering Corp., 100 High St., Milldale, Conn.
Anchor Hocking Glass Corp., Lancaster, Ohio
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Packaging Machinery Corp., 1400 West Ave., Buffalo
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Crown Cork & Seal Co., Baltimore, Md.
Filter Paper So., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
R. G. Haskins Co., 615 S. California St., Chicago
Karl Kiefer Machine Co., 919 Martin St., Cincinnati, Ohio
Ludcke Co., 41 N. Beacon St., Watertown, Mass.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Phoenix Metal Cap Co., 2444 W. 16th St., Chicago
Pneumatic Scale Corp., North Quincy, Mass.
Scientific Filter Co., 1 Franklin Sq., N. Y.
Stein Equipment Corp., 426 Broome St. Y. (Used)
Triangle Package Machy. Co., 910 N. Spaulding Ave., Chicago

CAPPING MATERIALS

Anchor Hocking Glass Corp., Lancaster, Ohio
Aridor Co., 3428 W. 48th Place, Chicago
Du Pont Cellophane Co., 2 Park Ave., N. Y.
Sylvania Industrial Corp., Chanin Bldg., N. Y.
Williams Sealing Corp., Decatur, Ill.

CAPS (Molded)

Anchor Hocking Glass Corp., Lancaster, Ohio
Armstrong Cork Co., Lancaster, Pa.
General Plastics, Inc., N. Tonawanda, N. Y.
Owens-Illinois Glass Co., Toledo, hio
Resinox Corp., Terre Haute, Ind.
Toledo Synthetic Prods. Co., Toledo, Ohio

CAPS (Metal)

Aluminum Co. of America, Gulf Bldg., Pittsburgh
Anchor Hocking Glass Corp., Lancaster, Ohio
Aridor Co., 3428 W. 48th Place, Chicago
Armstrong Cork Co., Lancaster, Pa.
Cans, Inc., 3217 W. 47th Pl., Chicago
Closure Service Co., Toledo, Ohio
Continental Can Co., 100 E. 42nd St., N. Y.
Crown Cork & Seal Co., Eastern Ave. & Kresson St., Baltimore
George D. Ellis Sons, 309 N. 3rd St., Phila.
Ferdinand Gutmann & Co., 3611 4th Ave., Brooklyn
National Can Co., 110 E. 42nd St., N. Y.
National Seal Co., 14th Ave. & 37th St., Brooklyn
Owens-Illinois Glass Co., Toledo, Ohio
Phoenix Metal Cap Co., 2444 W. 16th St., Chicago
Williams Sealing Corp., Decatur, Ill.

CARBOLIC ACID, CRUDE (see PHENOL)

CARBON BISULFIDE

(see also Dealers)

Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Westvaco Chlorine Prods., 405 Lexington Ave., N. Y.

CARBON TETRACHLORIDE

(see also Dealers)

J. T. Baker Chemical Co., Phillipsburg, N. J.
Brown Co., Portland, Me.
Diamond Alkali Corp., 535 Smithfield St., Pittsburgh
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Niagara Smelting Corp., Niagara Falls, N. Y.
Pennsylvania Salt Mfg. Co., 1000 Widener Bldg., Phila.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Westvaco Chlorine Prods., 405 Lexington Ave., N. Y.

CARNAUBA WAX (see WAXES)

CARTON HANDLING SYSTEMS

J. L. Ferguson Co., Joliet, Ill.
Self-Lifting Piano Truck Co., Findlay, Ohio
Stephans-Adamson Mfg. Co., Aurora, Ill.
Weigh Right Automatic Scale Co., Joliet, Ill.

CARTON LINING MACHINES (see LINING MACHINERY)

CARTON SEALING MACHINERY (see SEALING MACHINERY)

CARTONING MACHINERY

Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. L. Ferguson Co., Joliet, Ill.
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Johnson Automatic Sealer Co., Battle Creek, Mich.
R. A. Jones & Co., Cincinnati, Ohio
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Stokes & Smith Co., 4915 Summerdale Ave., Phila.
Triangle Package Machinery Co., 906 N. Spaulding Ave., Chicago
Weigh Right Automatic Scale Co., Joliet, Ill.

CARTONS (Display and Knock Down)

Alderman-Fairchild Co., Rochester, N. Y.
F. N. Burt Co., 540 Seneca St., Buffalo, N. Y.
Consolidated Paper Co., Monroe, Mich.
Robert Gair Co., 155 E. 44th St., N. Y.
Gardner-Richardson Co., Middletown, Ohio
Nevins-Church Co., 250 Park Ave., N. Y.
New England Card & Paper Co., Springfield, Mass.
Pictorial Package Co., Aurora, Ill.
Randolph Box & Label Co., 843 W. VanBuren St., Chicago
W. C. Ritchie & Co., 8855 S. Baltimore Ave., Chicago
Robertson Paper Box Co., Inc., Montville, Conn.
George Schmitt & Co., Grand & Florence Sts., Brooklyn
Sutherland Paper Co., Kalamazoo, Mich.
U. S. Printing & Lithographing Co., Cincinnati, Ohio
Universal Folding Box Co., Monroe & 13th St., Hoboken, N. J.

LABORATORY CONTROL

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THE DAVIES-YOUNG SOAP CO.
DAYTON, OHIO

CASE SEALING MACHINERY (see SEALING MACHINERY)

CASEIN

American-British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Casein Co. of America, Div. of The Borden Co., 350 Madison Ave., N. Y.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Hercules Powder Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Land-o-Lakes Creameries, Minneapolis
National Casein Co., 603 W. 80th St., Chicago
E. M. Sergeant Pulp & Chem. Co., Empire State Bldg., N. Y.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

CASES (Fibre) (see BOXES, CANS)

CASES (Corrugated) (see BOXES)

CASSIA OIL (see ESSENTIAL OILS)

CASTILE SOAP, BAR

Armour Soap Wks., 1355 W. 31st St., Chicago
Conti Products Corp., 155 Varick St., N. Y.
Haskins Bros. & Co., Omaha
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Kranich Soap Co., 54 Richards St., Brooklyn
Lockwood-Brackett Co., Waltham Station, Boston
Los Angeles Soap Co., Los Angeles, Calif.
Newell Gutradt Co., 350 Fremont St., San Francisco
Peck's Prods. Co., 5238 N. 2nd St., St. Louis
Procter & Gamble Co., Ivorydale, O.
Geo. W. Schmidt Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Bklyn.
Swift & Co., Chicago
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

CASTILE SOAP, LIQUID

Ampion Corp., 47-02 5th St., Long Island City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Baums Castorine Co., 200 Matthew St., Rome, N. Y.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chemical Co., 247 Front St., N. Y.
Davies-Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., Kensington, Phila.
Haag Laboratories, Inc., 6101 S. May St., Chicago
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Higley Chem. Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Kranich Soap Co., 54 Richards St., Brooklyn
Lewis Soap & Chem. Co., 2210 San Pablo Ave. Oakland, Calif.
Moore Bros., 67 Vestry St., N. Y.
National Oil Products Co., Harrison, N. J.
Palmer Products, Inc., Waukesha, Wisc.
Peck's Prods. Co., 5238 N. 2nd St., St. Louis
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.

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Pine Oil Disinfectants, (Coefs. 3 and 4)
Coal Tar Disinfectants
Phenolic Emulsifying Disinfectants, (Coefs. 2 to 20)
Soluble Cresylic Disinfectants, (B. A. I. and Coml. Std.)
Saponated Solution of Cresol, U. S. P. (Cresol Comp. Solution)

Phenol coefficients determined by Lawall and Harrisson Laboratories.

SOAPS

Liquid Hand Soaps
Soap Bases (Vegetable Base)
Oil Soaps (Paste and Liquid)
Pine Jelly Soaps
Pine Scrub Soaps—Liquid
Liquid Scrub Soap—Natural
Sassafrassy Scrub Soap
Auto Soft Soap
Green Soap (Medicinal Soft Soap) U. S. P.
Hospital Soaps
Saddle Soap (in cans)
Dog Soap (cake)
Fish Oil Soaps (semi-liquid and hard)
Govt. Specification Soaps

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Fly Sprays
Bed Bug Sprays
Moth Sprays
Cattle Sprays
Concentrated Insect Spray
Animal Dip (Cattle and Sheep)
Agricultural Insecticides:
Oil Emulsions (dormant spray)
Fish Oil Spray Soap (spreader, sticker, and insecticide)
Deodorant Liquid for drip machines
Deodorant Blocks

POLISHES, WAXES and CLEANERS

Self Polishing Waxes (Liquid)
Buffing Floor Waxes (Liquid & Paste)
(Oil Wax or Spirit Wax)
Liquid Metal Polish
Liquid Silver Polish
Liquid Furniture Polish (Cream Emulsion)
Lemon Oil Polish
Cedar Oil Polish
Floor Oils
Wax Base Floor Cleaner (Wax-Soap)
Liquid Toilet Fixture Cleaner
Degreasing Compound

SPECIALTIES

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Fire Extinguishing Liquid (CTC Base)
Soda & Acid Fire Extinguishing Recharges
Powdered Rosin (bulk and packages)
Camphorated Oil U. S. P.
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John T. Stanley Co., 642 W. 30th St., N. Y.
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Superior Soap Corp., 121 Nostrand Ave., Bklyn.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

CASTOR OIL

(see also Dealers)

Archer-Daniels-Midland Co., Minneapolis
Baker Castor Oil Co., 120 Broadway, N. Y.
Balfour, Guthrie & Co., 67 Wall St., N. Y.
T. G. Cooper & Co., 47 N. 2nd St., Phila.
Otto A. C. Hagen Co., 929 Public Ledger Bldg., Phila.
Spencer Kellogg & Sons, Buffalo, N. Y.
National Oil Products Co., Harrison, N. J.
Pacific Vegetable Oil Corp., 62 Townsend St., San Francisco
J. H. Redding, Inc., 17 Battery Place, N. Y.
Richards Sales Corp., Warren & Morris Sts., Jersey City, N. J.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Arthur C. Trask Co., 4103 S. La Salle St., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

CATALYTS

Aluminum Co. of America, Gulf Bldg., Pittsburgh
General Chem. Co., 40 Rector St., N. Y.
Harshaw Chem. Co., Cleveland
Wurster & Sanger, Inc., 5201 S. Kenwood Ave., Chicago

CATTLE DIPS AND SPRAYS

(see also Sheep Dips)

An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Cal.
Ampion Corp., 47-02 5th St., Long Island City, N. Y.
Associated Chemists, Inc., 1906 N. Halsted Ave., Chicago
Baird & McGuire, Holbrook, Mass.
Baird & McGuire, Inc. of Mo., St. Louis
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
California Spray-Chemical Corp., Richmond, Calif.
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 2526 W. Congress St., Chicago
Chipman Chem. Co., Bound Brook, N. J.
Clifton Chemical Co., 247 Front St., N. Y.
Davies-Young Soap Co., Dayton, O.
Delta Chem. Co., 4 Payson Ave., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Goulard & Olena, 140 Liberty St., N. Y.
Haag Laboratories, Inc., 6101 S. May St., Chicago
Higley Chem. Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
James Huggins & Son, 239 Medford St., Malden, Mass.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Hunt Mfg. Co., Lisbon Rd., Cleveland
William E. Jordan & Bros., 2590 Atlantic Ave., Brooklyn
Kemico Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
McLaughlin, Gormley, King Co., Minneapolis, Minn.
National Oil Products Co., Harrison, N. J.
North Coast Soap & Chem. Wks., Seattle, Wash.
Peck's Prod. Co., 522-40 N. 2nd St., St. Louis
Rex Research Corp., Toledo
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Schaeffer Bros. & Powell Mfg. Co., 102 Barton St., St. Louis

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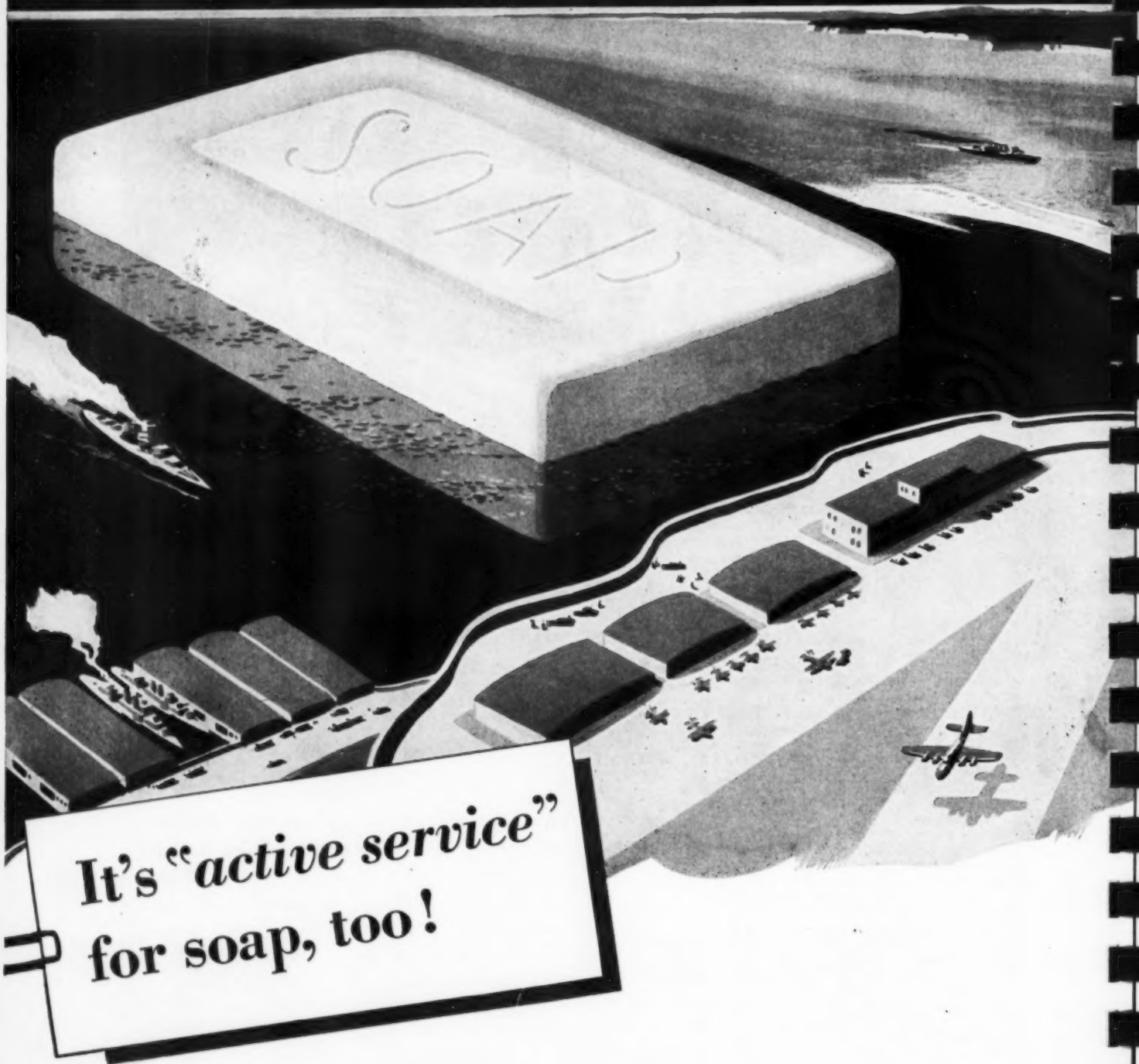

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Soap is one of the essential commodities that must be handled by the military supply lines. It is indispensable for keeping our armed forces healthy and in top-notch fighting condition.

Abundant quantities of soap, for service on land and sea, are being produced with the help of Caustic Soda. This important industrial chemical, of which Dow is a major supplier, serves the soap industry as a saponifier, a process material and a refining agent.

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Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co. (Ohio), Midland Bldg., Cleveland
Thompson-Hayward Chem. Co., 2915 Southwest Blvd., Kansas City, Mo.
Tobacco By-Products & Chem. Corp., Louisville, Ky.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Universal Chem. Corp., Akron, O.
Velsicol Corp., 120 E. Pearson St., Chicago
Victory Chem. Co., 148 Fairmont Ave., Phila.
Robert C. White Co., Falls of Schuylkill, Phila.
White Tar Co., Kearney, N. J.

CATTLE SPRAY BASE (see PETROLEUM BASES)

CAUSTIC POTASH (see POTASH, CAUSTIC)

CAUSTIC SODA

(see also Dealers)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Belle Alkali Co., Belle, W. Va.
Brown Company, Portland, Me.
Champion Fibre Co., Canton, N. C.
Diamond Alkali Co., 535 Smithfield St., Pittsburgh
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Hooker Electrochemical Co., Niagara Falls, N. Y.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Kimberley-Clark Paper Co., Neenah, Wis.
Mathieson Alkali Works, 60 E. 42nd St., N. Y.
Michigan Electrochemical Co., Menominee, Mich.
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Niagara Smelting Corp., Niagara Falls, N. Y.
Oxford Paper Co., White Mountains, N. H.
Pennsylvania Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Westvaco Chlorine Prods. Co., 405 Lexington Ave., N. Y.
Welch, Holme & Clark, 563 Greenwich St.,, N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

CEDAR LEAF OIL (see ESSENTIAL OILS)

CEDARWOOD OIL (see ESSENTIAL OILS)

CERESIN WAX (see WAXES)

CHALK (Calcium Carbonate)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
H. J. Baker & Bro., 271 Madison Ave., N. Y.
Binney & Smith Co., 41 E. 42nd St., N. Y.
Charles B. Chrystal Co., 16 Hudson St., N. Y.

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CHEMICALS

CAUSTIC SODA . 50% and 73% Liquid
76% Flake
76% Solid
76% Ground and Powdered

Columbia Caustic Soda is especially desirable for soap-making because of its high purity and freedom from metallic contamination. The 76% Flake product is packed in 400-lb. drums. The 50% and 73% Liquid grades are shipped in tank cars of notably improved design which effectively prevent crystallization. The exclusive Columbia protective coating used on these cars prevents metallic contamination en route.

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Prepared to rigid specifications developed through 40 years' experience in meeting the requirements of the soap industry.

Produced under carefully controlled conditions to insure purity, uniform density, and proper regularity of physical form.

MODIFIED SODAS . . . Mixtures of Sodium Carbonate and Sodium Bicarbonate. Used primarily in cleansing operations where a mild alkaline detergent-aid is required. Manufactured in three different grades—Nos. 100, 200 and 300—with different alkalinities.

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CHALK (Calcium Carbonate) (Contd.)

Diamond Alkali Co., 535 Smithfield St., Pittsburgh
E. I. Du Pont de Nemours & Co., Wilmington, Del.
A. C. Drury & Co., 219 East North Water St., Chicago
Fezandie & Sperrle, 205 Fulton St., N. Y.
E. Fougera & Co., 41 Maiden Lane, N. Y.
Goris & Arnstein, 37th & Racine Ave., Chicago
K. F. Griffiths Co., 110 E. 42nd St., N. Y.
Hammill & Gillespie, 225 Broadway, N. Y.
Charles Hardy, Inc., 415 Lexington Ave., N. Y.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis Speiden & Co., 117 Liberty St., N. Y.
James H. Rhodes & Co., 157 W. Hubbard St., Chicago
L. A. Salomon & Bro., 216 Pearl St., N. Y.
Tamms Silica Co., 228 N. LaSalle St., Chicago
Whittaker, Clark & Daniels, Inc., 260 W. Broadway, New York
Wishnick-Tumpeer, Inc., 295 Madison Ave.. N. Y.

CHAMOIS

Addison Sponge Co., 118 E. Court St., Cincinnati
Allied Industrial Prods. Co., 620 N. Michigan St., Chicago
Amer. Sponge & Chamois Co., 47 Ann St., N. Y.
Atlas Sponge Co., 291 Church St., N. Y.
Churchill Mfg. Co., Galesburg, Ill.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Great Eastern Sponge & Chamois Co., 833 N. Patt. Pk. Ave., Baltimore
Jos. Neihaus Co., 341 W. 4th St., Cincinnati
James H. Rhodes & Co., 157 W. Hubbard St., Chicago
Schroeder & Tremayne, 500 N. Coml. St., St. Louis

CHEMICALS, LOCAL DEALERS (see DEALERS, CHEMICALS)

CHEMISTS, CONSULTING, See CONSULTANTS, See LABORATORIES, TESTING

CHILLING ROLLS

Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
William Garrigue & Co., 9 S. Clinton St., Chicago
Houchin Machy. Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
J. M. Lehmann Co., 248 W. Broadway, N. Y.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Proctor & Schwartz, 7th St. & Tabor Rd., Philadelphia
C. G. Sargent's Sons Corp., Graniteville, Mass.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
F. J. Stokes Machine Co., 5974 E. Tabor Rd., Phila.
Wurster & Sanger, Inc., 5201 S. Kenwood Ave., Chicago

CHIPPERS (see SOAP MACHINERY)

CHIP SOAPS (including Flakes)

American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Co., 1355 W. 31st St., Chicago
Beach Soap Co., Lawrence, Mass.
Chicago Sanitary Products Co., 3100 S. Throop St., Chicago
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Du Bois Soap Co., Cincinnati, Ohio
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Haskins Bros. & Co., Omaha
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PERFECT *Soap Flakes*

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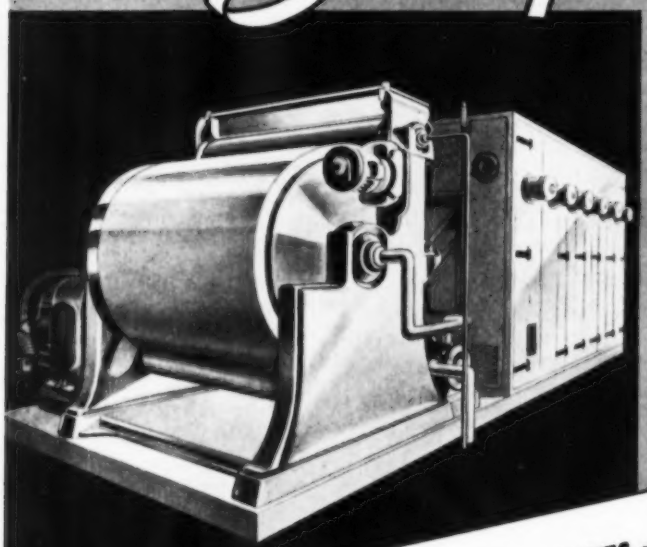

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The New Proctor Flake Soap System assures the soap manufacturer the uniformly dried, equally thin, even-edged flakes needed for producing high quality granulated soaps and toilet cakes. This completely modern equipment also assures the absolutely *perfect* flakes required for packaging. The New Proctor System receives hot liquid soap from kettle or crutcher and delivers dried flakes in one operation . . . requiring from 6 to 14 minutes for the varying flake thicknesses. Output from 750 to 6000 lbs. per hour can be maintained. Absolute *control* of all variables in flake production is achieved. This streamlined system's smooth, easily-kept-clean surfaces mark an important advancement in soap machinery design. Big savings in operating costs and upkeep are assured. There is also a tremendous reduction in waste soap from the chilling and drying processes. A similar number of features and benefits are also embodied in the new Proctor Roll for Shaving Cream. Ask for details.

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Lever Bros. Co., Cambridge, Mass.
Los Angeles Soap Co., Los Angeles, Calif.
Geo. E. Marsh Co., 200 Broadway, Cambridge, Mass.
National Milling & Chem. Co., Manayunk, Phila.
National Oil Products Co., Harrison, N. J.
National Soap Co., 357 South 25th St., Tacoma, Wash.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati
Geo. Schmidt Co., 236 W. North Ave., Chicago, Ill.
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Chicago
Warren Soap Mfg. Co., 51 Warren St., Cambridge, Mass.
M. Werk Co., Cincinnati
Chas. W. Young & Co., 1247 N. 26th St., Phila.

CHLORIDE OF LIME (see BLEACHING POWDER)

CHLORINE

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Hooker Electrochemical Co., Niagara Falls, N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Alkali Works, 60 E. 42nd St., N. Y.
Monsanto Chemical Works, 1724 S. 2nd St., St. Louis
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Pennsylvania Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Westvaco Chlorine Prods. Co., 405 Lexington Ave., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

CHLORINE DISINFECTANTS (see DISINFECTANTS)

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Brown Company, Portland, Me.
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E. I. Du Pont de Nemours & Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Malinckrodt Chemical Works, St. Louis, Mo.
Merck & Co., Rahway, N. J.
Niagara Smelting Corp., Niagara Falls, N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.

CHLOROPHYLL (see also ESSENTIAL OILS)

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R. W. Greef & Co., 10 Rockefeller Plaza, N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Interstate Color Co., 5 Beekman St., N. Y.
Krembs & Co., 669 W. Ohio St., Chicago
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
Merck & Co., Rahway, N. J.
R. J. Prentiss & Co., 80 John St., N. Y.
Pylam Products Co., 799 Greenwich St., N. Y.
Sandoz Chem. Works, Inc., 61 Van Dam St., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

CITRAL (see AROMATIC CHEMICALS)

CITRONELLAL (see AROMATIC CHEMICALS)

CITRONELLA OIL (see ESSENTIAL OILS)

CITRONELLOL (see AROMATIC CHEMICALS)

CLAYS

(see also Bleaching Earths)

American Colloid Co., 363 W. Superior St., Chicago
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Attapulgus Clay Co., 260 So. Broad St., Phila.
California Industrial Minerals Co., Friant, Calif.
Chas. B. Chrystal Co., 16 Hudson St., N. Y.
Dicalite Co., 120 Wall St., N. Y.
A. C. Drury & Co., 219 E. N. Water St., Chicago
Fezandie & Sperrle, 205 Fulton St., N. Y.
Filtrol Corp., 634 S. Spring St., Los Angeles
Goris & Arnstein, 37th & Racine Ave., Chicago
Hammil & Gillespie, 225 Broadway, N. Y.
Hercules Powder Co., Wilmington, Del.
J. M. Huber, Inc., 460 W. 34th St., N. Y.
Illinois Silica Co., Cairo, Ill.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
International Silica Co., Cairo, Ill.
Natura Minerals Co., 108 W. 6th St., Los Angeles
National Sales Corp., 33 E. 13th St., Cincinnati
Owyhee Chemical Products Co., 300 W. Adams St., Chicago
Peerless Clay & Mineral Co., Pueblo, Colo.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
Sinclair Refining Co., East Chicago, Ind.
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
A. E. Starkie Co., 5461 W. Division St., Chicago
Tamms Silica Co., 228 N. LaSalle St., Chicago
United Clay Mines Corp., 101 Oakland St., Trenton, N. J.
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.
Wyodak Chem. Co., 4600 E. 71st St., Cleveland

CLEANERS, LIQUID

American Chemical Paint Co., Ambler, Pa.
American Soap & Washoline Co., Cohoes, N. Y.
Ampion Corp., 47-02 5th St., Long Island City, N. Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Calif.
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour & Co., 1355 W. 31st, Chicago
Banner Chem. Prods. Co., 329 Mulberry St., Newark, N. J.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Barton Chemical Co., 3907 S. Langley Ave., Chicago
Britol Laboratories, 947-61st St., Brooklyn, N. Y.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Laboratories, 22-19 37th Ave., Long Island City, N. Y.
Continental Car-Na-Var Corp., Brazil, Ind.
Curran Corp., Malden, Mass.
Davies-Young Soap Co., Dayton, Ohio
Delta Chemical Co., 4 Payson Ave., N. Y.
Diversey Corp., 53 W. Jackson Blvd., Chicago
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Eagle Soap Corp., Huntington, Ind.
Franklin Research Co., 5134 Lancaster Ave., Phila., Pa.
Fuld Bros., 702 So. Wolfe St., Baltimore

For Soap Powders and Solutions: Many Solvay alkalies, such as Solvay Fluf* and 58% Light Soda Ash and special cleanser mixtures, are ideally suited for mixing with dry or wet soaps.

For Bath Crystal Base: Solvay Snowflake* Crystals—used by many of the country's leading producers of bath crystals—have built up a reputation for their non-caking features and beautiful appearance, ready solubility, and their ability to accept coloring and perfumes. Solvay Snowflake Crystals are a mild cleanser. They *soften the water,* DO NOT HARDEN IT!

For Household Bleaches: Solvay Liquid Chlorine and Caustic Soda are used in making household bleach. The Solvay bleach testing kit—a simple means of determining percentage of available chlorine—is available at cost. Write for more information.

For Drain Pipe Solvents: Solvay 76% Flake and 76% Ground Caustic Soda, with additions of other materials, are widely used by manufacturers of drain pipe solvents.

For Demothing and Deodorizing: Solvay Para-dichlorobenzene is widely used as a demothing and deodorizing agent. Solvay Para-dichlorobenzene in various crystal sizes is available for all purposes. It may be dyed, perfumed, and poured or pressed into blocks as desired. In crystal form, it makes up attractively in transparent packages.

For Household Cleansers: Solvay manufactures a complete line of alkali products, from mild to strong alkalies that may be used as the base in household cleansers for practically every housecleaning requirement.

For Commercial Cleansers and Metal Cleaning: Solvay alkalies, in varying strengths, from straight Soda Ash and Caustic Soda to Snowflake* Crystals, are available to repackers for preparing cleansers for metal and other types of heavy duty industrial cleaning. Write for full information today.

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40 Rector Street New York, N. Y.

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☐ Snowflake Crystals ☐ Fluf ☐ Caustic Potash
☐ Special Cleansers ☐ Soda Ash ☐ Para-dichlorobenzene
☐ Super Alkalies ☐ Caustic Soda

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★SOLVAY CAUSTIC SODA—*Solid • Flake • Liquid Ground • Powdered*—The high standard of quality which The Solvay Process Company has established in the alkali field is well exemplified in Solvay Caustic Soda—made from soda ash manufactured by the Solvay process.

For the convenience of the consumer, Solvay Caustic Soda is delivered in the five forms listed above.

Where manufacturers are equipped to handle and store the liquid form, handling costs can be proportionately reduced and convenience greatly facilitated. For full information, send for the **SOLVAY BOOK ON LIQUID CAUSTIC SODA.** This latest authoritative publication gives all necessary practical information regarding the unloading and handling of this highly advantageous product.

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Solvay Caustic Potash is manufactured with the most modern equipment available, insuring a product of high, unvarying quality. Maintenance of this quality is assured to your plant door because of the utilization of efficient, modern handling methods.

Available grades are: liquid, tank cars, 49-50%, drums, 45%; dry, 90% in solid, flake, ground, and lump.

★SOLVAY SNOWFLAKE* CRYSTALS

Pure white, crystalline, immediately and entirely soluble, always free running, Solvay Snowflake Crystals are an excellent water softener and effective soap saver.

Perfect solubility enables this mild cleanser to do its work without leaving a residue. Snowflake Crystals also makes a perfect base for bath salts.

★SOLVAY SPECIAL CLEANSERS—mixtures of basic materials used in all general cleansing. Solvay manufactures a complete line of these cleansers, covering every cleansing need which can be filled by the use of alkalies. Literature describing these products, can be obtained from any office of the Solvay Sales Corporation.

★SOLVAY SUPER ALKALIES—Solvay Super Alkalies are specially prepared mixtures of a stronger type than the Special Cleansers. These alkalies are well adapted to the heavy duty of cleaning.

Full information will be supplied promptly upon request.

★SOLVAY FLUF*—Fluf makes an ideal cleanser to add to your line of repackaging products. It is an extra light soda ash made especially fluffy, bulky and light by a process that is exclusive with Solvay. Its weight per cubic foot is approximately ⅔ that of regular soda ash.

Fluf is particularly valuable where maximum bulk with minimum weight is required, as in repackaging.

★SOLVAY SODA ASH—*58% Dense, Light and Extra Light*—Solvay Soda Ash is made of materials selected with the utmost care. It is a product of high purity, controlled in its manufacture by rigid specifications that have been formulated through more than half a century of experience.

★SOLVAY PARA-DICHLOROBENZENE

Wide selection of grade sizes in *Fine • Medium • Coarse • Super-Coarse Crystals*—Especially well adapted to block manufacture.

Solvay Para-dichlorobenzene is supplied in many carefully graded crystal forms, insuring perfect blending with colors and perfumes.

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CLEANERS, LIQUID (Contd.)

James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Haag Laboratories, 6101 S. May St., Chicago
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Hercules Chem. Co., 332 Canal St., N. Y.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco, Cal.
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, Ohio
James Huggins & Son, Malden, Mass.
Hull Co., 305 Washington St., Brooklyn
Hysan Prods. Co., 58 E. Cullerton St., Chicago
La Maison Prods., Inc., 80 York St., Brooklyn
Lewis Soap & Chem. Co., 2210 San Pablo Ave., Oakland, Calif.
M. & H. Laboratories, 2703 Archer Ave., Chicago
Moore Bros. Co., 67 Vestry St., New York
National Oil Products Co., Harrison, N. J.
Palmer Products, Inc., Waukesha, Wisc.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Pennsylvania Refining Co., Butler, Pa.
Puritan Chem. Co., Atlanta, Ga.
Richard's Sales Corp., Warren & Morris Sts., Jersey City, N. J.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Sanitary Prods. Co., 874 Seward St., Rochester, N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
John T. Stanley Co., 642 W. 30th St., N. Y.
S. S. Stafford, Inc., 603 Washington St., N. Y.
Thompson-Hayward Chem. Co., 2915 Southwest Blvd., Kansas City, Mo.
Transmotive Laboratories, 2550 S. Michigan Ave., Chicago
Trojan Prods. & Mfg. Co., 3107 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chemical Co., 329 E. 29th St., New York City
U. S. Sanitary Spec. Corp., 435 So. Western Ave, Chicago
Universal Chem. Corp., Akron, O.
White Tar Co., Kearney, N. J.
Wilco Co., 6800 McKinley Ave., Los Angeles

CLEANING COMPOUNDS, DRY

American Soap & Washoline Co., Cohoes, N. Y.
American Chemical Paint Co., Ambler, Pa.
Ampion Corp., 47-02 5th St., Long Island City, N. Y.
Armour & Co., 1355 W. 31st St., Chicago
Barton Chemical Co., 3907 S. Langley Ave., Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Beach Soap Co., Lawrence, Mass.
Blockson Chemical Co., Joliet, Ill.
Brilco Laboratories, 947-61st St., Brooklyn, N. Y.
California Industrial Minerals Co., Friant, Calif.
Philip Carey Mfg. Co., Lockland, Cincinnati
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chem. Co., 247 Front St., N. Y.
Cole Laboratories, 22-19 37th Ave., L. I. City, N. Y.
Columbia Soap & Chem. Co., Inc., 217-221 Clara St., San Francisco
Continental Car-Na-Var Corp., Brazil, Ind.
Cowles Detergent Co., Cleveland, Ohio
Crystal Labs., Inc., 21 W. Park Way, N. E., Pittsburgh
Cudahy Packing Co., 221 N. LaSalle St., Chicago
Curran Corp., Malden, Mass.
Davies-Young Soap Co., Dayton, O.
Delta Chemical Co., 4 Payson Ave., N. Y.
Diversey Corp., 53 W. Jackson Blvd., Chicago
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Goulard & Olena, Inc., 140 Liberty St., N. Y.
Haag Laboratories, Inc., 6101 S. May St., Chicago
Haeuser Shellac Co., 52 Warren St., Brooklyn, N. Y.
Hercules Chem. Co., 332 Canal St., New York
Hercules Powder Co., Wilmington, Del.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Prods. Co., 58 E. Cullerton St., Chicago
H. Kohnstamm & Co., 91 Park Pl., N. Y.
J. S. Lawston Co., 8 Henshaw St., N. Y.
Lewis Soap & Chem. Co., 2210 San Pablo Ave., Oakland, Calif.
Los Angeles Soap Co., Los Angeles, Calif.
M. & H. Laboratories, 2703 Archer Ave., Chicago
Midway Chemical Co., 5235 W. 65th St., Chicago
Napthole, Inc., 15 E. 26th St., New York
Nat'l Milling & Chem. Co., Manayunk, Phila.
National Oil Products Co., Harrison, N. J.
National Soap Co., 357 South 25th St., Tacoma, Wash.
North Coast Soap & Chem. Wks., Seattle, Wash.
Pacific Chem. Co., 1421 N. Main St., Los Angeles
Palmer Products, Inc., Waukesha, Wisc.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Philadelphia Quartz Co., 125 S. 3rd St., Phila.
Pittsburgh Plate Glass Co., Columbia Chem. Div., Grant Bldg., Pittsburgh
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Ivorydale, O.
Puritan Chem. Co., Atlanta, Ga.
Richards Chem. Wks., Warren & Morris Sts., Jersey City, N. J.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Solshine Mfg. Co., 44 Brookline St., Boston
Solvay Sales Corp., 40 Rector St., N. Y.
L. Sonneborn Sons, 88 Lexington Ave., N. Y.
S. & S. Soap Co., 324 Barretto St., Bronx, N. Y.
John T. Stanley Co., 642 W. 30th St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Stevens Soap Corp., 200 Sullivan St., Brooklyn
John Sunshine Chem. Co., 604 W. Lake St., Chicago
Thompson-Hayward Chem. Co., 2915 Southwest Blvd., Kansas City, Mo.
Trojan Prods. & Mfg. Co., 3130 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
United Cleanser Mfg. Co., Cambridge, Mass.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Universal Chem. Corp., Akron, O.
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
York Chemical Co., 424 W. 18th St., N. Y.

CLEANING FLUIDS (Spotting Fluids)

Ampion Corp., 4-88—47th Ave., Long Island City, N. Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Calif.
Armour & Co., 1355 W. 31st St., Chicago
Atlantic Refining Co., 260 South Broad St., Phila.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chem. Co., 247 Front St., N. Y.
Cole Laboratories, 22-19 37th Ave., Long Island City, N. Y.
Curran Corp., Malden, Mass.
Davies-Young Soap Co., Dayton, O.
Delta Chemical Co., 4 Payson Ave., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Elkay Products Corp., 323 W. 16th St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 Susquehanna Ave., Phila.
Higley Chem. Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
James Huggins & Son, Malden, Mass.
Hull Co., 305 Washington St., Brooklyn
Hysan Prods. Co., 58 E. Cullerton St., Chicago
La Maison Prods. Inc., 80 York St., Brooklyn, N. Y.
McKesson & Robbins, Bridgeport, Conn.

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CLEANING FLUIDS (Contd.)

Merck & Co., Rahway, N. J.
Midway Chemical Co., 5235 W. 65th St., Chicago
Moore Bros. Co., 67 Vestry St., N. Y.
Palmer Products, Inc., Waukesha, Wisc.
Pennsylvania Refining Co., Butler, Pa.
Standard Oil Co. (Calif), 225 Bush St., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
R. R. Street & Co., 561 W. Monroe St., Chicago
Transmotive Laboratories, 2550 S. Michigan Ave., Chicago
Trojan Prods. & Mfg. Co., 3107 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
White Tar Co. of N. Y., Kearney, N. J.
Wilco Co., 6800 McKinley Ave., Chicago

CLIPS (for Collapsible Tubes) (see also TUBES, COLLAPSIBLE)

Acme Clip & Mfg. Co., 426 S. Clinton St., Chicago
Arthur Colton Co., Detroit
George G. Rodgers Co., 183 Varick St., N. Y.
Standard Spec. & Tube Co., New Brighton, Pa.

CLOSURES

Anchor Hocking Glass Corp., Lancaster, O.
Aridor Co., 3428 W. 48th Pl., Chicago
Closure Service Co., Toledo, O.
Continental Can Co., 100 E. 42nd St., N. Y.
Crown Cork & Seal Co., Baltimore
Phoenix Metal Cap Co., 2444 W. 16th St., Chicago
Williams Sealing Corp., Decatur, Ill.

CLOVE OIL (see ESSENTIAL OILS)

COAL TAR DISINFECTANTS (see DISINFECTANTS)

COCOA BUTTER

Walter Baker & Co., 601 W. 26th St., N. Y.
Durkee Famous Foods, Inc., 2670 Elston Ave., Chicago
Spencer Kellogg & Sons, Buffalo, N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
A. N. Stollwerck Co., Camden, N. J.
Welch, Holme & Clark, 563 Greenwich St., N. Y.

COAL TAR RAW MATERIALS

American-British Chem. Supplies, 180 Madison Ave., N. Y.
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Baird & McGuire, Holbrook, Mass.
Baird & McGuire, Inc., of Mo., St. Louis
Barrett Co., 40 Rector St., N. Y.
S. H. Bell Co., 1407 Gulf Bldg., Pittsburgh
Wm. Cooper & Nephews, 1909 Clifton Ave., Chicago
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Otto A. C. Hagen Corp., Public Ledger Bldg., Phila.
James Huggins & Son, Malden, Mass.
Innis, Speiden & Co., 117 Liberty St., N. Y.
William E. Jordan & Bro., 2590 Atlantic Ave., Brooklyn
Koppers Co., Koppers Bldg., Pittsburgh, Pa.

TAR ACID OIL
for use in
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and
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Unusually High in Tar Acids
White-Emulsion and Pink-Emulsion Grades
MADE from LOW TEMPERATURE COAL TAR

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Producers and Refiners of Coal Tar and Tar Products

KOPPERS COAL TAR DERIVATIVES

KOPPERS TAR ACIDS

For Disinfectants: Various tar acids, excepting phenol, are used in the manufacture of disinfectants. The usual procedure is to mix equal volumes of tar acid and fifty per cent soap solution. The resulting clear red-brown liquid should be water soluble. For the preparation of the standard saponified cresol solution U.S.P. (Liquor Cresolis Saponatus) the U.S.P. grade of cresol must be used and the mixture compounded exactly as prescribed in the Pharmacopoeia. If the product is not to be labeled U.S.P. a wide variety of tar acids may be used and soaps made from any suitable oil may be employed.

When made from cresols such disinfectants have a phenol coefficient of about 2 and when made from xylenols a coefficient of about 5. (F. D. A. Method).

The Caustic Poison Act specifies that disinfectant containing 5% or more phenol must carry a poison label. The Bureau of Animal Industry specifies that B.A.I. Permitted Disinfectants shall contain less than 5% phenol. It is advisable, therefore, for purchasers of tar acids for disinfectant manufacture to specify a maximum phenol content so that their product will conform with these requirements.

TAR ACID OILS

Koppers Tar Acid Oils are standardized products consisting entirely of coal tar oils and coal tar acids. They are made from clean, chilled neutral oil to which has been added selected fractions of coal tar acids low in benzophenol. Koppers tar acid oils are available with tar acid contents ranging from 10 to 50 and with guaranteed phenol coefficients ranging from 2 to 10, under specified conditions of manufacture.

One use for Koppers Tar Acid Oils is in the manufacture of disinfectants and dips. This requires a clean oil that will give white emulsions in water when used in a balanced disinfectant formula and one that will stand low temperatures without showing crystals, as well as one low in benzophenol. Koppers guaranteed phenol coefficient oils meet these requirements. Koppers Tar Acid Oils are excellent agents for cleaning the blocks, crankcases and carburetors of automobile engines. Poultrymen find them useful for keeping down insect pests.

KOPPERS CRUDE NAPHTHALENE

Koppers Crude Naphthalene is a partly refined coal-tar naphthalene. It contains small amounts of the coal tar oils from which it was obtained. It is a light gray to tan colored, granular solid with a tar-like odor. The impurities in the crude naphthalene are traces of tar oils distilling in the same range as naphthalene and, for many uses, are not objectionable. Koppers Crude Naphthalene is offered in two standard grades having melting points of 74°C. and 78°C. respectively. Other grades can be furnished if desired.

Crude naphthalene is employed in the manufacture of dry dips used in cattle and stock bedding and in various powdered insecticides. It is sometimes used as a plant insecticide or as a soil insecticide.

Crude naphthalene sometimes is sulfonated by soap makers or manufacturers of fatty acids for the preparation of Twitchell's Reagent.

REFINED NAPHTHALENE

Refined Naphthalene is a highly refined product, prime white in color. Its melting point is 79.4 C. or higher. Both crude and refined naphthalene are used in the agricultural field, although the latter generally is preferred. It is used for the control of many fungus and insect pests in gardens, on fruit trees, and in greenhouses. Naphthalene kills clothes moths in any stage of development.

AMMONIUM THIOCYANATE

Ammonium Thiocyanate may be used to improve certain prepared adhesives, where it acts as a solubilizer or liquefier to lower the gelling point.

In metal polishes, it may be used as a substitute for oxalic acid or ammonium oxalate.

Since the thiocyano group is incorporated in many types of organic compounds to make products having powerful insecticidal properties, ammonium thiocyanate can be utilized as a raw material for manufacturing these organic toxic agents.

KOPPERS COMPANY
PITTSBURGH, PA.

WHITE TAR DISINFECTANTS

Coal Tar Disinfectants (Phenol Coefficient 2 to 20—F.D.A. Method)— White Tar Coal Tar Disinfectants are emulsion type disinfectants. They are clear, dark amber colored liquids. When mixed with water they form milk-white emulsions. Coal tar disinfectants are not seriously inactivated in the presence of organic matter such as straw, grease or blood and can be depended upon to accomplish positive disinfection in most cases where some other types are ineffective.

Soluble Cresylic Disinfectants—These are widely-known and popular soluble type disinfectants. They are amber in color, and form clear, transparent solutions when mixed with soft water. They possess a high degree of bactericidal efficiency; they have the valuable property of remaining active in contact with organic matter, such as blood, pus, etc. and they may be used with soap and water. They are used where the odor of other disinfectants would be objectionable.

Liquor Cresolis Saponatus, U. S. P. XI: (Liquor Cresolis Compositus, U.S.P.X.; Compound Solution of Cresol; Saponified Cresol Solution, U.S.P.) Made with Cresol, U.S.P., strictly in accordance with the specifications of the United States Pharmacopoeia.

Hexsols. This is a soluble cresylic compound with a coefficient of not less than 5 F.D.A. Method. It contains 50% cresylic acid and meets the specifications of the United States Department of Agriculture, Bureau of Animal Industry.

Pine Oil Disinfectants—Pine Oil Disinfectants are made with steam distilled pine oil. When these disinfectants are mixed with water they form emulsions. They are available with phenol coefficients of 3, 4 or 5 plus, F.D.A. Method.

Pine Oil Deodorants—Used where there is no necessity for destroying bacterial growth, and where a pleasing odor is the only requirement. They have little or no value as germicides. They are diluted to form emulsions with water.

Liquid Cleaners—"Koleener," is a heavy-duty cleaner for assisting in the removal of dirt and grease from machine parts, garage floors.

Liquid Insecticides—Liquid sprays for flies, bedbugs and many other household insects.

WHITE TAR DIVISION—Kearny, N. J.

COAL TAR RAW MATERIALS (Contd.)

Monsanto Chemical Works, 1724 S. 2nd St., St. Louis
Neville Co., Pittsburgh, Pa.
Pittsburgh Coal Carbonization Co., Oliver Bldg., Pittsburgh
Reilly Tar & Chemical Co., Indianapolis
Standard Naphthalene Prods. Co., S. Kearney, N. J.
White Tar Co., Kearney, N. J.

COCONUT OIL

(see also Brokers and Dealers)

Atkins, Kroll & Co., 250 California St., San Francisco
Balfour, Guthrie & Co., 67 Wall St., N. Y.
Best Foods, Inc., 88 Lexington Ave., N. Y.
Capital City Products Co., Columbus, O.
E. F. Drew & Co., Wecoline Div., Boonton, N. J.
Durkee Famous Foods, Inc., 2670 Elston Ave., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
El Dorado Oil Wks., 230 California St., San Francisco
Franklin Baker Co., 1500 Bloomfield St., Hoboken, N. J.
Spencer Kellogg & Sons, Buffalo, N. Y.
Los Angeles Soap Co., Los Angeles, Calif.
Pacific Veg. Oil Corp., 62 Townsend St., San Francisco
Procter & Gamble Co., Cincinnati
J. H. Redding Co., 17 Battery Pl., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Smith-Weihman Co., 15 Moore St., N. Y.
A. E. Starkie, 5461 W. Division St., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

COCONUT FATTY ACIDS, See Fatty Acids

COCONUT OIL SOAPS (see HARD WATER SOAPS)

COCONUT OIL BASE SOAP (see POTASH SOAPS)

COCONUT OIL SHAMPOO BASE (see SHAMPOO BASE and POTASH SOAPS)

COCONUT OIL POWDERED SOAP (see POWDERED SOAPS)

COLLAPSIBLE TUBES

Aluminum Company of America, Gulf Bldg., Pittsburgh, Pa.
Art Tube Co., Irvington, N. J.
Bond Penn Tube Co., 501 Monroe St., Wilmington, Del.
Consolidated Fruit Jar Co., New Brunswick, N. J.
Globe Collapsible Tube Corp., 28 Columbia Heights, Brooklyn, N. Y.
Hygienic Tube Co., 34 Ave. L., Newark, N. J. (Celluloid)
National Collapsible Tube Co., Providence, R. I.
New England Collapsible Tube Co., New London, Conn.
Peerless Tube Co., Bloomfield, N. J.
Sun Tube Corp., Hillside, N. J.
Victor Metal Products Corp., Brooklyn, N. Y.
White Metal Mfg. Co., 1012 Grand St., Hoboken, N. J.
A. H. Wirz, Inc., Chester, Pa.

COLLOID MILLS

Abbe Engineering Co., 50 Church St., N. Y.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Colloid Equip. Co., 50 Church St., N. Y.
Consolidated Products Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati

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Interstate Color Co., 5 Beekman St., New York
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National Aniline & Chem. Corp., 40 Rector St., N. Y.
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E. I. Du Pont de Nemours & Co., Wilmington, Del.
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Fezandie & Sperrle, 205 Fulton St., N. Y.
Geigy Co., 89 Barclay St., N. Y.
General Dyestuffs Corp., 435 Hudson St., N. Y.
Interstate Color Co., 5 Beekman St., N. Y.
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Leeben Chem. Co., 389 Washington St., N. Y.
National Aniline & Chem. Corp., 40 Rector St., N. Y.
Tamms Silica Co., 228 N. La Salle St., Chicago
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Ingersoll-Rand Co., 11 Broadway, N. Y.
Miller-Simons, Inc., Cicero, Ill.
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Entomological Testing Labs., 114 E. 32nd St., N. Y.
Wm. Garrigue & Co., 9 S. Clinton St., Chicago
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Illinois Chemical Labs., Gridley, Ill.
La Wall & Harrison, 214 S. 12th St., Phila.
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Seil, Putt & Rusby, 16 E. 34th St., N. Y.
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Faesy & Besthoff, Inc., 22 E. 40th St., N. Y.
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Hawshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
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Cork Import Corp., 330 W. 42nd St., N. Y.
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(see also Brokers and Dealers)

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Balfour, Guthrie & Co., Ltd., 67 Wall St., N. Y.
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Durkee Famous Foods, Inc., 2670 Elston Ave., Chicago
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National Starch Products, 820 Greenwich St., N. Y.
E. M. Sergeant Pulp & Chem. Co., 350—5th Ave., N. Y.
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Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
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Geo. A. Schmidt Co., 236 W. North Ave., Chicago
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Shores Co., Cedar Rapids, Ia.
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Procter & Gamble Co., Cincinnati, O.
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Southern Cotton Oil Co., Produce Exchange, N. Y.
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Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
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Otto A. C. Hagen Corp., 929 Public Ledger Bldg., Phila.
Spencer & Kellogg & Sons, Buffalo, N. Y.
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Givaudan-Delawanna, 330 W. 42nd St., N. Y.
Maywood Chemical Wks., Maywood, N. J.
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CRESOLS (see COAL TAR RAW MATERIALS)

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R. J. Prentiss & Co., 80 John St., N. Y.
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Herbert Chem. Co., Vine & Murray Rd., Cincinnati
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Alex Fergusson Co., Drexel Bldg., Philadelphia
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Churchill Mfg. Co., Galesburg, Ill.
Clifton Chem. Co., 247 Front St., N. Y.
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Crystal Labs., Inc., 21 W. Park Way, N. E., Pittsburgh, Pa.
Davies-Young Soap Co., Dayton, O.
Delta Chemical Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
Elkay Products Corp., 323 W. 16th St., N. Y.
Fitch Dustdown Co., 801 S. Howard St., Baltimore
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Goulard & Olena, 140 Liberty St., N. Y.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chemical Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Industrial Labs., 17-19 W. Conway St., Baltimore
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Calif.
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Koppers Co., White Tar Div., Kearney, N. J.
Lewis Soap & Chem. Co., 2210 Pablo Ave., Oakland, Calif.
North Coast Soap & Chem. Wks., Seattle, Wash.
Palmer Products Inc., Waukesha, Wisc.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Puritan Chemical Co., Atlanta, Ga.
Reliable Chemical Co., P. O. Box 361, Passaic, N. J.
Theo. B. Robertson Prods., Co., 700 W. Division St., Chicago
Rochester Germicide Co., Rochester, N. Y.
Rochester Sanitary Prods. Co., 874 Seward St., Rochester, N. Y.
Selig Co., 336 Marietta St., Atlanta, Ga.
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
Trojan Products & Mfg. Co., 3107 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chemical Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Victory Chemical Co., 148 Fairmount Ave., Phila.
York Chemical Co., 424 W. 18th St., N. Y.

DERRIS PRODUCTS (see CUBE PRODUCTS)

DETERGENTS (Alkaline Salt Compounds)

American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
American Soap & Washoline Co., Cohoes, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour & Co., 1355 W. 31st St., Chicago
Baum's Castorine Co., Rome, N. Y.
Blockson Chemical Co., Joliet, Ill.
Calgon, Inc., Pittsburgh
Candy & Co., 2515 W. 35th St., Chicago
Chemical Mfg. & Dist. Co., Easton, Pa.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Cole Laboratories, 22-19 37th Ave., L. I. City, N. Y.
Cowles Detergent Co., 7016 Euclid Ave., Cleveland
Curran Corp., Malden Mass.
Delta Chem. Co., 4 Payson Ave., N. Y.
Diamond Alkali Co., Standard Silicate Div., 535 Smithfield St., Pittsburgh
Diversey Corp., 53 W. Jackson Blvd., Chicago
DuBois Soap Co., Cincinnati
E. I. Du Pont de Nemours & Co., Wilmington, Dela.
Economics Laboratory, Globe Bldg., St. Paul
Fuld Bros., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Hercules Powder Co., Wilmington, Dela.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco, Calif.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
A. R. Maas Chem. Co., South Gate, Calif.
Mathieson Alkali Works, 60 E. 42nd St., N. Y.
Midway Chemical Co., 5235 W. 65th St., Chicago
Monsanto Chemical Co., 1724 S. 2nd St., St. Louis
Napthole, Inc., 15 E. 26th St., New York
National Oil Products Co., Harrison, N. J.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Philadelphia Quartz Co., 125 S. 3rd St., Philadelphia
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
Port Huron Detergent Co., Port Huron, Mich.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., Patterson, N. J.
Stevens Soap Corp., 200 Sullivan St., Brooklyn, N. Y.
E. M. Sergeant Pulp & Chem. Co., 350 Fifth Ave., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
John T. Stanley Co., 642 W. 30th St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Swift & Co., Chicago
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Thompson-Hayward Chem. Co., 2915 S. W. Blvd., Kansas City
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Jos. Turner & Co., Ridgefield, N. J.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Westvaco Chlorine Prods. Co., 405 Lexington Ave., N. Y.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Wyandotte Chemical Co., Wyandotte, Mich.

DETERGENTS, Synthetic (Non-soap) Raw Materials

American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
E. F. Drew & Co., Wecoline Div., Boonton, N. J.
E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del.
General Dyestuff Corp., 435 Hudson St., N. Y.
Michel Export Co., Inc., 90 Broad St., N. Y.
National Aniline & Chemical Co., 40 Rector St., N. Y.
National Oil Products Co., Harrison, N. J.
L. Sonneborn Sons, 88 Lexington Ave., N. Y.

DETERGENTS, Synthetic Organic, (Non-soap)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Carbide & Carbon Chem. Corp., 30 E. 42nd St., N. Y.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Commercial Solvents Corp., Terre Haute, Ind.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Emulsol Corp., 59 E. Madison St., Chicago
Fuld Bros., 702 S. Wolfe St., Baltimore
General Drug Co., 644 Wolfe St., Bklyn.
General Dyestuff Corp., 435 Hudson St., N. Y.
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Hercules Powder Co., Wilmington, Del.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Lever Bros. Co., Cambridge, Mass.
Michel Export Co., 90 Broad St., N. Y.

BAIRD'S CERTIFIED PRODUCTS

COAL TAR DISINFECTANTS: This type of disinfectant is furnished in phenol coefficients ranging from 2 to 24 F.D.A. Method. Perfect emulsions, guaranteed stability, trouble free in cold weather. Uniformity at all times make these disinfectants the finest produced.

PINE OIL DISINFECTANTS: These fragrant odored disinfectants are manufactured from finest quality steam distilled Pine Oil under expert chemical and bacteriological supervision. Uniform at all times, form perfect milky-white emulsions in water, impart fragrant pine scent wherever used. Offered in coefficient strengths ranging from 2 to 7 inclusive. Guaranteed and tested by the F.D.A. Method of Test.

CRESYLIC DISINFECTANTS: These disinfectants are recommended for hospital, surgical and veterinary use, meet Bureau of Standards Specifications, offered in phenol coefficients ranging from 4 to 6 F.D.A. Method of Test, form crystal clear solutions in ordinary tap water.

ALKYL PHENOL DISINFECTANTS: These newly developed disinfectants are offered with phenol coefficients ranging from 2 to 34 F.D.A. Method. Can be had in either soluble or emulsifiable types.

BAC-TROL GERMICIDE: This unusual and different disinfectant is offered in coefficient 3 and 5 F.D.A. Has a distinctively different, pleasant odor enabling it to be used where other disinfectants would not be permitted. Forms milky-white emulsions in water, is stable under all conditions, uniform at all times. Obtainable in one quart and one gallon beautifully lithographed containers at extremely low prices. Available also in bulk for private brand packaging.

CREOSOTE OILS: Several grades are offered to meet specifications. For wood-preserving purposes, insecticidal uses, etc., we particularly recommend our No. 1 Refined Creosote Oil. Trouble free from sludge or separation even in sub-freezing weather. Low cost, excellent coverage and staining properties.

CRUDE CARBOLIC ACIDS: Furnished in strengths ranging from 15% tar acids to 50% tar acids. Clear, water and sludge-free oils which have been "chilled" to remove as much naphthalene as possible. Excellent as a farm insecticide.

CRESYLIC ACIDS: Of domestic and English manufacture ranging in tar acid content from 90% to 100%. Most popular grade 99/100% pale. Useful in manufacture of liquid insecticides, disinfectants, formaldehyde and other condensation products.

PES-TOX FLY SPRAY: Furnished either odorless or perfumed type. Grade A and AA by the Peet Grady Method of Test. Pleasantly scented when desired, guaranteed efficiency.

BUG-TOX INSECTICIDE: This product is particularly recommended for the killing of hard-shelled crawling insects. Contains no Pyrethrum. Furnished with jasmine, rose, or vanilla odor. Kills bedbugs, roaches, etc., quickly and surely.

PYRETHRUM CONCENTRATE No. 20: Either odorless or kerosene base. Guaranteed to contain a minimum of 2 grams Pyrethrins per 100 cc. Guaranteed to be stable, uniform and to form clear insecticide when diluted with proper base oil.

CRESTALL FLUID — CRESOL COMPOUND USP — CATTLE SPRAYS — WEEVIL KILLER—MOTH KILLER—TIC-TOX ARSENICAL DIP—TAR ACID OILS—LIQUID SOAPS — LIQUID AUTOMOTIVE CLEANER AND SPECIALTY PRODUCTS

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DETERGENTS, Synthetic Organic (Non-Soap) (Contd.)

Monsanto Chemical Co., St. Louis
National Aniline & Chem. Co., 40 Rector St., N. Y.
National Oil Products Co., Harrison, N. J.
Procter & Gamble Co., Cincinnati, O.
Richards Sales Corp., Jersey City, N. J.
Sandoz Chem. Wks., 61 Van Dam St., N. Y.
L. Sonneborn Sons, 88 Lexington Ave., N. Y.
Van Dyk & Co., 57 Wilkinson Ave., Jersey City, N. J.

DIATOMACEOUS EARTH, (see Bleaching Earths)

DIES (see SOAP DIES)

DIETHANOLAMINE (see ETHANOLAMINE)

DIFFUSERS (Steam and Air)

Electric Sprayit Co., Sheboygan, Wisc.
Fumeral Co., Racine, Wisc.
Mystic Products Co., 417 No. 5th St., Minneapolis

DIPHENYL OXIDE (see AROMATIC CHEMICALS)

DIP OIL (see COAL TAR RAW MATERIALS)

DISH WASHING COMPOUND DISPENSERS

Antiseptol Co., 5524 Northwest Highway, Chicago
Wm. M. Britton Co., 8610 Graham Ave., Los Angeles
Chemical Mfg. & Dist. Co., Easton, Pa.
Economics Laboratory, Inc., 622 Globe Bldg., St. Paul
Fuld Bros., 702 S. Wolfe St., Baltimore
Hochwald Chem. Co., 135 Mississippi St., San Francisco
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Mathieson Alkali Wks., 60 E. 42nd St., N. Y. (Cakes)
John T. Stanley Co., 642 W. 30th St., N. Y.
V. C. Products Co., Beury Bldg., Philadelphia (Powders)

DISH WASHING COMPOUNDS (see CLEANING COMPOUNDS)

DISINFECTANTS, CHLORINATED

Ampion Corp., 42-02 5th St., Long Island City, N. Y.
Baird & McGuire, Inc., Holbrook, Mass.
Baird & McGuire, Inc., of Mo., St. Louis
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Laboratories, 22-19 37th Ave., Long Island City, N. Y.
Diversey Corp., 53 W. Jackson Blvd., Chicago
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Goulard & Olena, Inc., 140 Liberty St., N. Y.
Haag Laboratories, 6101 S. May St., Chicago
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco, Calif.
R. M. Hollingshead Corp., Camden, N. J.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Mathieson Alkali Works, 60 E. 42nd St., N. Y.
McLaughlin Gormley King Co., Minneapolis, Minn.
Merck & Co., Rahway, N. J.
Monsanto Chemical Works, 1724 S. 2nd St., St. Louis
North Coast Soap & Chem. Works, Seattle, Wash.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Puritan Chem. Co., Atlanta, Ga.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Sanitary Prods. Co., 874 Seward St., Rochester, N. Y.
Sherwin-Williams Co., 601 Canal Rd., Cleveland
Thompson-Hayward Chemical Co., Kansas City, Mo.
Trojan Products & Mfg. Co., 3107 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Victory Chem. Co., 148 Fairmount Ave., Phila.

DISINFECTANTS, COAL TAR and PINE OIL

Ampion Corp., 47-02 5th St., Long Island City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Baird & McGuire, Inc., Holbrook, Mass.
Baird & McGuire, Inc. of Mo., St. Louis
Banner Chem. Prods. Co., 329 Mulberry St., Newark, N. J.
Samuel Cabot, Inc., 141 Milk St., Boston
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Laboratories, 22-19 37th Ave., Long Island City, N. Y.
Continental Car-Na-Var Corp., Brazil, Ind.
Wm. Cooper & Nephews, 1909 Clifton Ave., Chicago
Creco Co., Inc., Creco Bldg., Long Island City, N. Y.
Davies-Young Soap Co., Dayton, O.
Delta Chemical Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
Fergusson Laboratories, Drexel Bldg., Phila.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Haag Laboratories, Inc., 6101 S. May St., Chicago
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Higley Chem. Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
James Huggins & Son, 239 Medford St., Malden, Mass.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Koppers Co., White Tar Div., Kearny, N. J.
McLaughlin Gormley King Co., 1715 Fifth St., S. E., Minneapolis, Minn.
Merck & Co., Rahway, N. J.
National Oil Products Co., Harrison, N. J.
Palmer Products, Inc., Waukesha, Wisc.
Peck's Prods Co., 5240 N. 2nd St., St. Louis
Puritan Chem. Co., Atlanta, Ga.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., Rochester, N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio
Shores Co., Cedar Rapids, Ia.
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Uncle Sam Chemical Co., 329 E. 29th St., N. Y.
U. S Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Vliet & Co., 638 Monroe St., Brooklyn
West Disinfecting Co., Long Island City, N. Y.
York Chemical Co., 424 W. 18th St., N. Y.

DISINFECTANTS, Synthetic

Baird & McGuire, Inc., Holbrook, Mass.
Baird & McGuire, Inc., St. Louis
Fuld Bros., 702 S. Wolfe St., Baltimore
Higley Chem. Co., Dubuque, Ia.

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DISINFECTANTS, Synthetic (Contd.)

R. M. Hollingshead Corp., Camden, N. J.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Monsanto Chem. Co., St. Louis
Puritan Chem. Co., Atlanta, Ga.

DISINFECTANTS, COEFFICIENT TESTS (see LABORATORIES)

DISPENSERS, Liquid Soap (see SOAP DISPENSERS)

DISSEMINATORS, PERFUME (see PERFUME DISSEMINATORS)

DOG REPELLENTS

Acme White Lead Co., Detroit
Ampion Corp., 4-88—47th Ave., Long Island City, N. Y.
California Spray-Chemical Corp., Richmond, Calif.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Cole Laboratories, 22-19 37th Ave., Long Island City
Delta Chem. Co., 4 Payson Ave., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Hammond Paint & Chem. Co., Beacon, N. Y.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Midway Chemical Co., 5235 W. 65th St., Chicago
Tobacco By-Products & Chem. Corp., Louisville, Ky.
Trojan Prods. & Mfg. Co., 3130 S. Wabash Ave., Chicago
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago

DRAIN PIPE SOLVENT

Ampion Corp., 4-88—47th Ave., Long Island City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Banner Chem. Prods. Co., 329 Mulberry St., Newark, N. J.
Baum's Castorine Co., Rome, N. Y.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Laboratories, 22-19 37th Ave., L. I. City, N. Y.
Continental Car-Na-Var Corp., Brazil, Ind.
Creco Co., Inc., Creco Bldg., Long Island City, N. Y.
Delta Chemical Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Goulard & Olena, Inc., 140 Liberty St., N. Y.
Haag Laboratories, 6101 S. May St., Chicago
Hercules Chem. Co., 332 Canal St., New York
Higley Chemical Co., Dubuque, Ia.
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hull Co., 305 Washington St., Brooklyn
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Industrial Labs., 17-19 W. Conway St., Baltimore
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Lewis Soap & Chem. Co., 2210 San Pablo Ave., Oakland, Calif.
Mechling Bros. Chemical Co., Line St. & Cooper's Creek, Camden
Midway Chemical Co., 5235 W. 65th St., Chicago
North Coast Chem. & Soap Wks., Seattle, Wash.
Palmer Products, Inc., Waukesha, Wisc.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., Rochester, N. Y.
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
John Sunshine Chem. Co., 604 W. Lake St., Chicago
Superior Soap Corp., 121 Nostrand Ave., **Brooklyn**
Trojan Prods. & Mfg. Co., 3130 S. Wabash **Ave., Chicago**
J. A. Tumbler Labs., 423 Hanover St., **Baltimore**
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago

DRIP MACHINES

Ampion Corp., 47-02 5th St., Long Island City, N. Y.
Chemical Mfg. & Dist. Co., **Easton, Pa.**
Clifton Chemical Co., 247 Front St., N. Y.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Garnet Chem. Corp., 911 N. Lumber St., Allentown, **Pa.**
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Palmer Prods. Inc., Waukesha, Wisc.
Rochester Germicide Co., 16 Downing Pl., Rochester.
Geo. B. Robbins Dis. Co., 42 Charlton St., Boston
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western **Ave.,** Chicago
West Disinfecting Co., Long Island City, N. Y.

DRUM FILLING MACHINERY (see FILLING MACHINERY, DRUMS)

DRUM WASHERS (see WASHING MACHINERY, DRUMS)

DRUMS (see BARRELS)

DRY CLEANING SOAPS

Ampion Corp., 4-88—47th Ave., Long Island City, N. Y.
Armour & Co., 1355 W. 31st St., Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Beach Soap Co., Lawrence, Mass.
Clifton Chemical Co., 247 Front St., N. Y.
Davies-Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
J. Eavenson & Sons, Del & Penn Sts., Camden, N. J.
Empire Chemical Prods. Co., 10 Longworth St., Newark, N. J.
Fuld Bros., 702 S. Wolfe St., Baltimore
Haag Laboratories, 6101 S. May St., Chicago
Harley Soap Co., Pierce and Orthodox Sts., Phila.
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Hysan Prods. Co., 58 E. Cullerton St., Chicago
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Midland Chem. Labs., Dubuque, Ia.
National Oil Products Co., Harrison, N. J.
North Coast Chem. & Soap Wks., Seattle, Wash.
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Richards Sales Corp., Warren & Morris Sts., Jersey City, N. J.
Riverside Mfg. Co., 4919 Conn St., St. Louis
John T. Stanley Co., 642 W. 30th St., N. Y.
R. R. Street & Co., 561 W. Monroe St., Chicago
Swift & Co., **Chicago**
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Ultra Chem. Wks., Inc., Kitay Bldg., Paterson, N. J.
U. S. Sanitary Specialties Corp., 435 S. Western Ave.,
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Chicago
M. Werk Co., Cincinnati, O.

DRYING MACHINERY (General)

C. O. Bartlett & Snow Co., Cleveland
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Buckeye Dryer Co., 131 W. Lake St., Chicago

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Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.
Buffalo Foundry & Machine Co., Buffalo, N. Y.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Drying Systems, Inc., 1800 Foster Ave., Chicago
Ellis Dry Co., 2444 N. Pulaski Ave., Chicago
B. F. Gump Co., 431 S. Clinton St., Chicago
Houchin Machinery Co., Hawthorne, N. J.
Lancaster Iron Works, Lancaster, Pa.
J. M. Lehmann Co., 248 W. Broadway, N. Y.
Louisville Drying Equipment Co., Louisville, Ky.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Oven Equipment Co., New Haven, Conn.
Philadelphia Drying Mach. Co., Philadelphia
Proctor & Schwartz, 7th St. & Tabor Rd., Philadelphia
C. G. Sargent's Sons Corp., Graniteville, Mass.
Ernest Scott & Co., Fall River, Mass.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
F. J. Stokes Machine Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.
B. F. Sturtevant Co., Hyde Park, Boston

DRYERS, for Chip Soaps and Bars

Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Proctor & Schwartz, 7th St. & Tabor Rd., Philadelphia
C. G. Sargent's Sons, Graniteville, Mass.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)

DUST PANS

A. Kreamer, Inc., 307 Kent Ave., Brooklyn
F. H. Lawson Co., Cincinnati
Palmer Products, Inc., Waukesha, Wisc.
White Mop Wringer Co., Fultonville, N. Y.

DUSTERS (Wool, Feather, Etc., for Cleaning)

Hoag Duster Co., 200 Church St., N. Y.
Illinois Duster & Brush Co., 1944 Webster Ave., Chicago
Palmer Products, Inc., Waukesha, Wisc.
Rubon Woodfinishing & Prods. Co., 500 W. 7th St., Kansas City, Mo.
P. R. Schuman Duster Co., 65 E. 53rd St., Brooklyn
Tu-way Products Co., 1423 Franklin St., Detroit
P. Wohl & Sons, 85 Bayard St., N. Y.

DUSTERS (for insecticides) See Bellows

EMULSIFYING AGENTS

Aluminum Co. of America, Gulf Bldg., Pittsburgh
American Chemical Paint Co., Ambler, Pa.
American Colloid Co., 363 W. Superior St., Chicago
Arabol Mfg. Co., 110 E. 42nd St., N. Y.
Atlantic Refining Co., 260 S. Broad St., Philadelphia
Atlas Powder Co., Wilmington, Del.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Commercial Solvents Corp., Terre Haute, Ind.
A. C. Drury & Co., 219 East North Water St., Chicago
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Emery Industries, Inc., 4300 Carew Tower, Cincinnati
Emulsol Corp., 59 E. Madison St., Chicago
General Drug Co., 644 Pacific St., Bklyn.
Glyco Products Co., 230 King St., Bklyn.
James Good Co., 2116 E. Susquehanna Ave., Phila.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Hercules Powder Co., Wilmington, Dela.
Hull Co., 305 Washington St., Brooklyn
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
National Oil Products Co., Harrison, N. J.
Natural Minerals Co., 108 W. 6th St., Los Angeles
Orbis Products Corp., 215 Pearl St., N. Y.
Pennsylvania Refining Co., Butler, Pa.
Petroleum Specialties, Inc., 570 Lexington Ave., N. Y.
Philadelphia Quartz Co., 125 S. 3rd St., Phila.
Procter & Gamble Co., Ivorydale, O.
Pylam Products Co., 799 Greenwich St., N. Y.
Richards Chem. Works, Warren and Morris Sts., Jersey City, N. J.
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Sandoz Chemical Works, Inc., 61 Van Dam St., N. Y.
L. Sonneborn Sons, 88 Lexington Ave., N. Y.
A. E. Starkie, 5461 W. Division St., Chicago
Van Dyk Co., 57 Wilkinson Ave., Jersey City, N. J.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Woburn Degreasing Co., Harrison, N. J.
Jacques Wolfe & Co., Passaic, N. J.

EMULSIFYING EQUIPMENT (see HOMOGENIZERS, MIXING EQUIPMENT, ETC.)

ETHER

Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Chas. Cooper & Co., 194 Worth St., N. Y.
J. T. Baker Chem. Co., Phillipsburg, N. J.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Mallinckrodt Chem. Wks., 3600 N. 2nd St., St. Louis
Merck & Co., Rahway, N. J. (also Petroleum)
Standard Alcohol Co., 26 Broadway, N. Y.
U. S. Industrial Chem. Co., 60 E. 42nd St., N. Y.

ETHER, PETROLEUM (see SOLVENTS, PETROLEUM)

ESSENTIAL OILS

Van Ameringen-Haebler, Inc., 315—4th Ave., N. Y.
Aromatic Products, Inc., 15 E. 30th St., N. Y.
Bayonne Co., 404 Fourth Ave., N. Y.
W. J. Bush & Co., 11 E. 38th St., N. Y.
Bush Pan-America, Ltd., 136 Liberty St., N. Y.
Ph. Chaleyer, Inc., 160 E. 56th St., N. Y.
Antoine Chiris Co., Inc., 115 E. 23rd St., N. Y.
Compagnie Duval, 121 E. 24th St., N. Y.
Compagnie Parento, Inc., Croton-on-Hudson, N. Y.
Cox, Aspden & Fletcher, 39 Cortlandt St., N. Y.
Gerard J. Danco, Inc., 333—6th Ave., N. Y.
Dodge & Olcott Co., 180 Varick St., N. Y.
P. R. Dreyer, Inc., 119 W. 19th St., N. Y.
A. C. Drury & Co., 219 East North Water St., Chicago
Felton Chemical Co., 603 Johnson Ave., Brooklyn
Firmenich & Co., 135 5th Ave., N. Y.
Florasynth Laboratories, 1513 Olmstead Ave., N. Y. C.
Benj. French, Inc., 160—5th Ave., N. Y.
Fritzsche Brothers, Inc., 76 Ninth Ave., N. Y.
General Drug Co., 644 Pacific St., Bklyn.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
James B. Horner, Inc., 3 Platt St., N. Y.
Chas. L. Huisking & Co., 155 Varick St., N. Y.
Lautier Fils, 158 W. 18th St., N. Y.
Pierre Lemoine, Inc., 67 Cortlandt St., N. Y.
Geo. Lueders & Co., 427 Washington St., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
A. Maschmeijer, Jr., 43 W. 16th St., N. Y.
Hijos de Francisco Navarro, 132 Nassau St., N. Y.
Naugatuck Aromatics, 254 4th Ave., N. Y.
Neumann-Buslee & Wolfe, 224 W. Huron St., Chicago
New York Aromatics Co., 153 Waverly Pl., N. Y.
Norda Essential Oil & Chem. Co., 601 W. 26th St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
Polak's Frutal Wks., Inc., 36-14 35th St., L. I. City, N. Y.
Polak & Schwarz, Inc., 667 Washington St., N. Y.
Roure-DuPont, Inc., 366 Madison Ave., N. Y.

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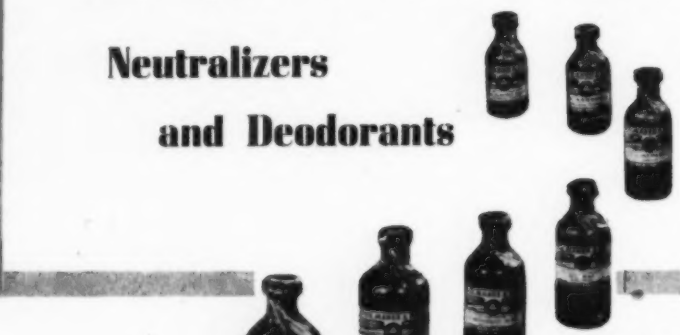

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Standard Synthetics, Inc., 119 W. 25th St., N. Y.
Synfleur Scientific Labs., Monticello, N. Y.
A. M. Todd Co., Kalamazoo, Mich.
Tombarel Products Corp., 12 E. 22nd St., N. Y.
Ungerer & Co., 161 Sixth Ave., N. Y.
Van Dyk & Co., 57 Wilkinson Ave., Jersey City, N. J.
Albert Verley, Inc., 232 E. Ohio St., Chicago

ETHANOLOMINE (see TRIETHANOLAMINE)

ETHYLENE DICHLORIDE (see SOLVENTS, ORGANIC)

EUCALYPTUS OIL (see ESSENTIAL OILS)

EVAPORATORS (Glycerine and Chemical)

E. B. Badger & Sons Co., 75 Pitt St., Boston
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Buffalo Fndry. & Mach. Co., Buffalo, N. Y.
Chemical Equipment Co., Montpelier, Ind.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Edge Moor Iron Wks., 30 Rockefeller Plaza, N. Y.
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
William Garrigue & Co., 9 S. Clinton St., Chicago
Houchin Machy. Co., Hawthorne, N. J.
Lancaster Iron Works, Lancaster, Pa.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Pfaudler Co., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Ernest Scott & Co., Fall River, Mass.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
F. J. Sokes Machine Co., Phila., Pa.
Struthers-Wells Titusville Corp., Warren, Pa.
Swenson Evaporating Co., Harvey, Ill.
Wurster & Sanger, 5201 S. Kenwood Ave., Chicago
Zaremba Co., 560 Crosby Bldg., Buffalo, N. Y.

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Buffalo Forge Co., 490 Broadway, Buffalo
Duriron Co., Dayton, Ohio
Garden City Fan Co., 832 S. Michigan, Chicago
General Regulator Corp., 711 W. Lake St., Chicago
Graybar Electric Co., 180 Varick St., N. Y.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago

FAT SPLITTING REAGENTS

Atlantic Refining Co., 260 S. Broad St., Philadelphia
Emery Industries, Inc., Carew Tower, Cincinnati
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Pennsylvania Refining Co., Butler, Pa.
Petroleum Specialties, Inc., 570 Lexington Ave., N. Y.
Sherwood Petroleum Co., Englewood, N. J.
L. Sonneborn Sons, 88 Lexington Ave., N. Y.
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago

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Alan Porter Lee, Inc., 136 Liberty St., N. Y.
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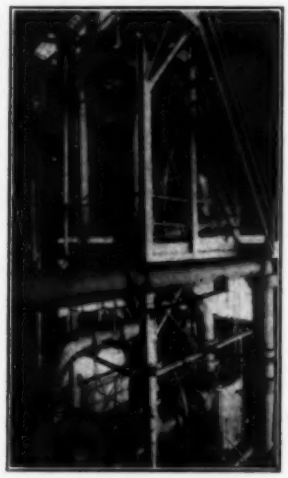

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(see also Brokers and Dealers)

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T. G. Cooper & Co., 47 N. 2nd St., Phila.
Darling & Co., 4201 So. Ashland Ave., Chicago
E. F. Drew & Co., Wecoline Div., Boonton, N. J.
Durkee Famous Foods, Inc., 2670 Elston Ave., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries Inc., 4300 Carew Tower, Cincinnati
A. Gross & Co., 295 Madison Ave., N. Y.
Otto A. C. Hagen Corp., 929 Public Ledger Bldg., Phila.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Spencer Kellogg & Sons, Buffalo, N. Y.
Los Angeles Soap Co., Los Angeles, Calif.
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Procter & Gamble Co., Cincinnati, O.
J. H. Redding, Inc., 17 Battery Place, N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y
E. M. Sergeant Pulp & Chemical Co., 350 5th Ave., N. Y.
Silmo Chemical Co., Vineland, N. J.
C. F. Simonin's Sons, Tioga & Belgrade St., Phila.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Southern Cotton Oil Co., Produce Exchange, N. Y.
A. E. Starkie Co., 5461 W. Division St., Chicago
Swift & Co., Union Stock Yards, Chicago
Theobald Industries, Kearny, N. J.
Arthur C. Trask Co., 4103 S. La Salle St., Chicago
Twitchell Process Co., Ivorydale, Ohio
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
M. Werk Co., St. Bernard, Cincinnati
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Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
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N. I. Malmstrom & Co., 147 Lombardy St., Bklyn., N. Y.
Michel Export Co., 90 Broad St., N. Y.
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"SPEEDS TO SUIT YOUR NEEDS"—15-30-60-120 Packages Per Minute

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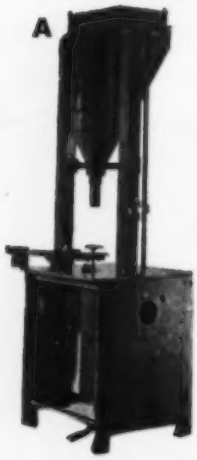

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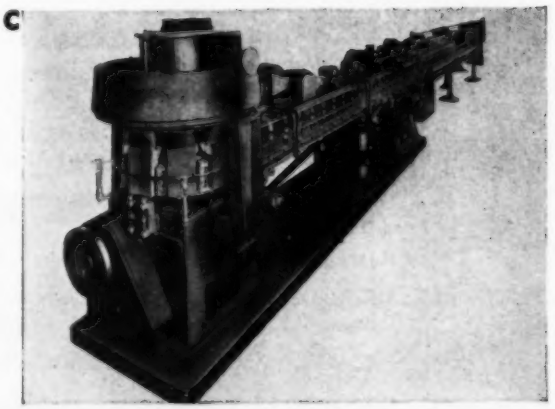

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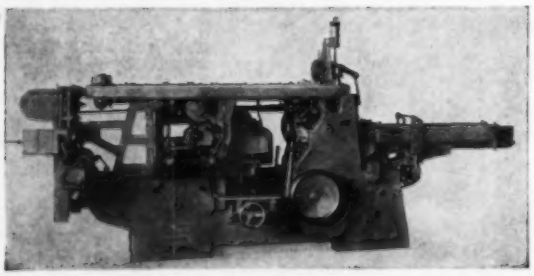

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Sprout, Waldron & Co., Muncy, Pa.
Stein Equipment Corp.. 426 Broome St., N. Y. (Used)
Stokes & Smith Co., 4915 Summerdale Ave., Philadelphia
Triangle Package Machine Co., 906 N. Spaulding Ave., Chicago
Weigh Right Automatic Scale Co., Joliet, Ill.

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Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Clevon Products Co., 27-31 Mechanic St., Buffalo
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Ertel Engineering Co., Kingston, N. Y.
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Horix Mfg. Co., Pittsburgh
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Pfaudler Co., Rochester, N. Y.
Pneumatic Scale Corp., North Quincy, Mass.
Scientific Filter Co., 12 Franklin Sq., N. Y.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
F. J. Stokes Machine Co., 5918 Tabor Rd., Philadelphia
U. S. Bottlers Machinery Co., 4025 N. Rockwell St., Chicago
The Vol-U-Meter Co., 707 Ohio St., Buffalo, N. Y.
Weigh Right Automatic Scale Co., Joliet, Ill.

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Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Clevon Products Co., 27-31 Mechanic St., Buffalo
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
National Acme Co., E. 131st St. & Coit Ave., Cleveland
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)

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Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Clevon Products Co., 27-31 Mechanic St., Buffalo
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. L. Ferguson Co., Joliet, Ill.
Filler Machine Co., 1250 E. Montgomery St., Phila.
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Pfaudler Co., Rochester, N. Y.
Progressive Eng. Co., Torresdale, Pa.
Scientific Filter Co., 12 Franklin Sq., N. Y.
C. T. Small Mfg. Co., 1204 Ferguson Ave., St. Louis, Mo.
Sprague-Sells Corp., 308 W. Washington St., Chicago
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Stokes & Smith Co., 4915 Summerdale Ave., Phila.
F. J. Stokes Machine Co., 5918 Tabor Rd., Philadelphia
Triangle Package Machy. Co., 910 N. Spaulding Ave., Chicago
Vol-U-Meter Co., 707 Ohio St., Buffalo, N. Y.
Weigh Right Automatic Scale Co., Joliet, Ill.

FILLING MACHINERY (Pastes, Drums)

Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Stokes & Smith Co., 4915 Summerdale Ave., Phila.

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Brill Equipment Corp., 183 Varick St., N. Y., (Used)
Clevon Products Co., 27-31 Mechanic St., Buffalo
Arthur Colton Co., Detroit, Mich.
Consolidated Prod. Co., 15 Park Row, N. Y. (Used)
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Scientific Filter Co., 12 Franklin Sq., N. Y.
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Consolidated Prod. Co., 15 Park Row, N. Y. (Used)
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First Machy. Corp., 819 E. 9th St., N. Y. (Used)
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Johnson Automatic Sealer Co., Battle Creek, Mich.
Modern Packaging Machy. Co., Danville, Ill.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Stokes & Smith Co., 4915 Summerdale Ave., Phila.
Sprout, Waldron & Co., Muncy, Pa.
F. J. Stokes Mach. Co., 5918 Tabor Rd., Philadelphia
Triangle Package Machinery Co., 906 N Spaulding Ave., Chicago
Weigh Right Automatic Scale Co., Joliet, Ill.

FILTER AIDS

Amer. Cyanamid & Chem. Corp., Rockefeller Plaza, N. Y.
Johns Manville, 22 E. 40th St., N. Y.
Dicalite Co., 120 Wall St., N. Y.
A. E. Starkie, 5461 W. Division St., Chicago
Tamms Silica Co., 229 N. La Salle St., Chicago

FILTER CLAYS (see CLAYS)

FILTER CLOTHS

Abbott Associates, 417 Park Sq. Bldg., Boston
Alsop Engineering Corp., 100 High St., Milldale, Conn.
Cleveland Wire Cloth & Mfg. Co., 3574 E. 78th St., Cleveland
Filter Paper Co., 57 E. 24th St., Chicago
B. F. Gump Co., 431 S. Clinton St., Chicago
Wm. E. Hooper & Sons, Juniper & Cherry Sts., Philadelphia
Independent Filter Press Co., 189 Seventh St., Brooklyn
National Filter Cloth & Weaving Co., 220 E. 42nd St., N. Y.
Newark Wire Cloth Co., 223 Verona Ave., Newark, N. J.
Oliver United Filters, Inc., 33 W. 42nd St., N. Y.
J. T. Perkins Co., 669 Kent Ave., Brooklyn
Wm. R. Perrin & Co., 349 W. 23rd St., Chicago
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RUBBER GLOSS is a self-polishing, slip and water resistant wax for all types of floors.

This is the brand that first offered both slip resistance and water resistance to the commercial users of floor wax. The tremendous wave of public acceptance for these two paramount quality features makes RUBBER GLOSS the standard of comparison.

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A highly concentrated wax soap cleaner that (1) does a better cleaning job because having the same emulsifying agents as RUBBER GLOSS WAX it makes quick work of traffic dirt, grease and old wax; (2) is safer to use and makes the floor safer to walk on; (3) seals as well as cleans thus protecting the floor against wear; (4) brightens and beautifies the surface; (5) is economical because being concentrated, a little goes a long way; (6) is equally good for walls, paints and general cleaning and maintenance.

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The Franklin Research Company manufactures a number of emulsions that aid conservation in numerous fields. These include preservatives for fruits and vegetables, rubber, leather, all painted surfaces; Franklin water repellents for building materials, textiles, jutes; an entirely new method for increasing the stability of critical papers; new emulsion type coatings for metal surfaces to retard rust and corrosion; emulsion type cleaners for metal parts and castings.

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FRANKLIN RESEARCH COMPANY

Philadelphia, Pa.

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Filter Paper Co., 57 E. 24th St., Chicago
General Chemical Co., 40 Rector St., N. Y.
August Giese & Son, 121 E. 24th St., N. Y.
Karl Kiefer Machine Co., Cincinnati, O.
Geo. Lueders & Co., 427 Washington St., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
Palo Co., 81 Reade St., N. Y.
Scientific Filter Co., 12 Franklin Sq., N. Y.
T. Shriver & Co., Harrison, N. J.

FILTER PRESSES

Alsop Engineering Corp., 100 High St., Milldale, Conn.
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Consolidated Prods Co., 15 Park Row, N. Y. (Used)
Ertel Engineering Corp., Kingston, N. Y.
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Independent Filter Press Co., 189 Seventh St., Brooklyn
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Oliver United Filters, Inc., 33 W. 42nd St., N. Y.
Patterson Foundry & Machine Co., East Liverpool, Ohio
Wm. R. Perrin & Co., 349 W. 23rd St., Chicago
Scientific Filter Co., 12 Franklin Sq., N. Y.
T. Shriver & Co., Harrison, N. J.
Sparkler Mfg. Co., 201 Lake St., Mundelein, Ill.
D. R. Sperry & Co., Batavia, Ill.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
United Filters Corp., Hazelton, Pa.

FILTERING MATERIALS (see also CLAYS, FILTER AIDS, and DECOLORIZING CARBON)

American Colloid Corp., 363 W. Superior St., Chicago
Dicalite Co., 120 Wall St., New York
Filtrol Corp., 315 W. 5th St., Los Angeles
Industrial Chem. Sales Div., West Va. Pulp and Paper Co., 230 Park Ave., N. Y.
Innis-Speiden & Co., 117 Liberty St., New York
Johns-Manville Corp., 22 East 40th St., New York
Peerless Clay & Mineral Co., Pueblo, Colo.
A. E. Starkie, 5461 W. Division St., Chicago
Wishnick-Tumpeer, Inc., 295 Madison Ave., New York

FILTERS (Special)

Alsop Engineering Corp., 100 High St., Milldale, Conn.
S. F. Bowser & Co., 1302 E. Creighton Ave., Ft., Wayne, Ind.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Cuno Engineering Co., Meriden, Conn.
Ertel Engineering Corp., Kingston, N. Y.
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Foster Pump Wks., Inc., 54 Washington St., Brooklyn
Jacob House & Sons, 52 St. Paul St., Buffalo
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
Lancaster Iron Works, Lancaster, Pa.
Mixing Equipment Co., 1067 Garson Ave., Rochester
Newman Tallow & Soap Machy. Co., 1051 W. 35 St., Chicago (Used)
Oliver United Filters, Inc., 33 W. 42nd St., N. Y.
Permutit Co., 330 W. 42nd St., N. Y.
Scientific Filter Co., 12 Franklin Sq., N. Y.
T. Shriver & Co., Harrison, N. J.
Sparkler Mfg. Co., 201 Lake St., Mundelein, Ill.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
U. S. Bottlers Machy. Co., 4015 N. Rockwell St., Chicago
Whiting Corp., Harvey, Ill.

FIRE EXTINGUISHER FLUID (See CARBON TETRACHLORIDE)

FIRE-PROOFING COMPOUNDS

Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Cole Laboratories, 22-19 37th Ave., L. I. City, N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Glyco Products Co., 230 King St., Bklyn.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Monsanto Chemical Co., 1724 South Second St., St. Louis
Niacet Chemicals Corp., Niagara Falls, N. Y.
Price Fire & Water Proofing Co., Poughkeepsie, N. Y.
Protexol Corp., 32 Market St., Kenilworth, N. J.
Victor Chemical Works, 141 West Jackson Blvd., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

FISH OILS

(see also Brokers and Dealers)

Atlantic Products Corp., Commercial Trust Bldg., Phila.
Atlas Refinery, Lockwood St., Newark, N. J.
Falk & Co., Pittsburgh
Hooker Electrochemical Co., Niagara Falls, N. Y.
Murray Oil Products Co., 21 West St., N. Y.
National Oil Products Co., Harrison, N. J.
Pacific Vegetable Oil Co., 62 Townsend St., San Francisco
J. H. Redding, Inc., 17 Battery Place, N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
A. E. Starkie, 5461 W. Division St., Chicago
Swan Finch Oil Corp., 30 Rockfeller Plaza, N. Y.
Arthur C. Trask Co., 4103 S. La. Salle St., Chicago
Welch, Holme & Clark Co., 563 Greenwich St, N. Y.

FISH OIL SOAPS

James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
National Oil Products Co., Harrison, N. J.
Newell Gutradt Co., 350 Fremont St., San Francisco
North Coast Chem. & Soap Works, Seattle, Wash.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Silmo Chemical Co., Vineland, N. J.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Thompson-Hayward Chem. Co., Kansas City, Mo.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

FIXATIVES, PERFUME (See ESSENTIAL OILS)

FLAKE SOAPS (see CHIP SOAPS)

FLOATING SOAPS

Armour & Co., 1355 W. 31st St., Chicago
Beach Soap Co., Lawrence, Mass.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Cudahy Packing Co., 221 N. La Salle St., Chicago
J. Eavenson & Sons, Camden, N. J.
Haskins Bros. & Co., Omaha
Hewitt Soap Co., Dayton, Ohio
Iowa Soap Co., Burlington, Iowa
Lightfoot Schultz Co., 663 Fifth Ave., N. Y.
Procter & Gamble Co., Cincinnati
Geo. A. Schmidt & Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Chicago
M. Werk Co., Cincinnati, O.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

FEDERAL

Sealers, Finishes and Waxes

for Every Type of Surface

Federal Floor Preservatives and Polishes are highly perfected products. They are the result of constant research, both in the laboratory and in practical usage. They are specialized products made by America's largest manufacturer of Preservatives and Polishes selling in bulk.

The Federal Line—a quality product for every purpose and every surface.

NO-BURN GYM FINISH
An extremely hard, durable finish that will not rubber-burn on gymnasium floors and which has such remarkable resistance to wear and abuse, it can be used on all types of interior or exterior surfaces including dance floors, school furniture, desks, seats, etc. Applied with a lamb's-wool mop, applicator or cheesecloth pad.

G. F. B. No. 2
This is No-Burn Gym Finish except made in a standard body for brush application.

G. F. B. No. 3
Is the same remarkably durable finish as No-Burn Gym Finish but intended for use only on surfaces where a hand rubbed finish is desired.

G. F. B. CONCENTRATED BASE COLORS
Highly perfected concentrated base colors for use with No-Burn Gym Finish to impart colors as well as extreme durability on wood, concrete and cement surfaces. Made in Light Oak, Dark Oak, Light Gray, Dark Gray, Walnut, Maroon, Green.

FED-CO PENETRATING SEALER
This is a highly specialized penetrating sealer for wood floors. Seals wood pores, makes a harder, longer wearing floor that is easy to clean. Meets the conditions and requirements of large organizations operating chain units. Applied by spraying or large lamb's-wool applicator. Forms a hard, durable finish that will not stain merchandise accidentally dropped on it.

PENETROIL SEALER
A penetrating sealer, very pale in color, that can be used for sealing either new surfaces or surfaces that have been formerly sealed. It properly fills the pores and is resistant to water.
Especially recommended as a sealer type material for use where subsequent coats of wax are to be applied.

TERRAZZO SEALER
The perfect sealer for terrazzo and marble floors. Reduces cost of maintenance. Prevents penetration of dirt. Very pale.

MOP-VAR
A Penetrating Sealer to be applied with a mop or other applicator. Reduces maintenance and application costs. For wood, concrete, hard mastic or magnesite, cork and cork tile.

LIGHTNING LUSTRE
A wear and water resisting, self-polishing, high lustre carnauba wax base finish of highest quality. For linoleum, congoleum, wood, rubber tile, soft composition and for maintenance of practically any surface.

VAR-LIN
A preservative and polish combining the hardest waxes of best quality, varnish gums and quick drying solvents. Very durable and practically eliminates the slipping hazard. Polishes to a beautiful gloss.

LIQUID OIL BASE WAX
A wax of the oil base type. Applied with a mop or applicator. Buffs and polishes beautifully. A superior product of its type.

RUBBER LACQUER
A superior lacquer developed particularly for use on rubber and rubber tile. Dries rapidly, easily applied and very durable. Will not discolor light shades.

LINOLEUM LACQUER
Specially made for printed, lacquer finished inlaid linoleum and congoleum or Sealex types of linoleum. Dries in 30 minutes, easy to apply and will not cause light, delicate shades to fade or discolor.

GYM FINISH CLEANER AND POLISH
Specially developed for cleaning gymnasium floors, hand ball and basket ball courts, etc. Perfectly cleans rubber shoe marks and other soil, difficult to remove.

LESLIP WATER WAX
A high lustre, self-polishing wax—made to enable you to meet price competition—compares most favorably when tested for brilliance, body, wearing qualities, washability and resistance to slip, with much higher priced products.

LINOLEUM, RUBBER & TERRAZZO CLEANER
Meets perfectly all requirements for a superior cleaner for these surfaces. Keeps the surface always in proper condition and prevents deterioration.

GYM FINISH MARKING ENAMELS
Another Federal specialized product made for marking hand ball courts, basket ball floors, running lanes, etc. Has the remarkable wearing quality of Gym Finish and possesses great covering and hiding power. Made in White, Red, Black, Yellow, Blue, Green, Tan, Ivory, Orange and Jade.

STREET MARKING OR TRAFFIC PAINT
A rapid drying paint for marking traffic lanes, parking spaces and similar uses. For both inside and outside use. Dries for traffic use in 30 minutes. Has remarkable wearing quality necessary for a product of this kind.

Also

PASTE WOOD FILLERS AND VARNISH REMOVERS

Our laboratories are constantly developing new products and perfecting new methods and treatments for beautifying and preserving all floor surfaces. Write for complete information, testing samples and prices.

FEDERAL VARNISH COMPANY

Dept. 430, 331-337 SO. PEORIA STREET, CHICAGO, ILL.

FLOOR FINISHES (Non-Wax)

Ampion Corp., 4-88—47th Ave., Long Island City, N. Y.
Candy & Co., 2515 W. 35th St., Chicago
Chemical Compounding Corp., 262 Huron St., Bklyn.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Laboratories, 22-19—37th Ave., Long Island City
Continental Car-Na-Var Corp., Brazil, Ind.
Davies-Young Soap Co., Dayton, O.
Delta Chem. Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
Empire Chemical Prods. Co., 10 Longworth St., Newark, N. J.
Federal Varnish Co., 337 S. Peoria St., Chicago
Franklin Research Co., 5134 Lancaster Ave., Phila.
Fuld Bros., 702 S. Wolfe St., Baltimore
Higley Chemical Co., Dubuque, Iowa
Hockwald Chemical Co., 135 Mississippi St., San Francisco
Hysan Prods. Co., 58 E. Cullerton St., Chicago
La Maison Prods., Inc., 80 York St., Brooklyn
Lewis Soap & Chem. Co., Oakland, Calif.
National Oil Products Co., Harrison, N. J.
Palmer Products, Inc., Waukesha, Wis.
Peck's Products Co., St. Louis
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
L. Sonneborn Sons, Inc., 88 Lexington Ave., N. Y.
S. S. Stafford, Inc., 603 Washington St., N. Y.
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Twin City Shellac Co., 340 Flushing Ave., Brooklyn
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Victory Chem. Co., 148 Fairmount Ave., Phila.
T. F. Washburn Co., 2244 Elston Ave., Chicago

FLOOR MACHINES

Adams Prods., Inc., 248 W. Fairfield Ave., St. Paul
Amer. Floor Surfacing Mach. Co., Toledo, O.
Continental Car-Na-Var Corp., Brazil, Ind.
Electric Sprayit Co., Sheboygan, Wisc.
Fay Co., 130 Madison Ave., N. Y.
Finnell System, Inc., Elkhart, Ind.
General Floor Craft Corp., 333 Sixth Ave., N. Y.
Hild Floor Machine Co., 1313 W. Randolph St., Chicago
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Kent Co., Rome, N. Y.
S. C. Lawlor Co., 122 N. Aberdeen St., Chicago
Lincoln-Schlueter Floor Machy. Co., 220 W. Grand Ave., Chicago
Ponsell Floor Machine Co., 220 W. 19th St., N. Y.

FLOOR SCRAPERS

Central Rubber Prods. Co., 823 Broadway, N. Y.
Churchill Mfg. Co., Galesburg, Ill.
A. F. Dormeyer Mfg. Co., 2640 Greenwich Ave., Chicago
Greenview Mfg. Co., 2557 Greenview Ave., Chicago
Lincoln-Schlueter Floor Machy. Co., 512 S. Peoria Ave., Chicago
Palmer Products, Inc., Waukesha, Wis.
White Mop Wringer Co., Fultonville, N. Y.

FLOOR SCRUB SOAPS (see also Potash Soaps)

American Soap & Washoline Co., Cohoes, N. Y.
Ampion Corp., 47-02—5th St., Long Island City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour & Co., 1355 W. 31st St., Chicago
Baird & McGuire, Inc., St. Louis
Banner Chem. Prods. Co., 329 Mulberry St., Newark, N. J.
Baum's Castorine Co., Rome, N. Y.
Candy & Co., 2515 W. 35th St., Chicago
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Road, Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chemical Co., 247 Front St., N. Y.
Cole Laboratories, 22-19—37th Ave., Long Island City.
Continental Car-Na-Var Corp., Brazil, Ind.
Churchill Mfg. Co., Galesburg, Ill.
Davies-Young Soap Co., Dayton, O.
Delta Chem. Co., Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
Empire Chem. Prods. Co., 12 Longworth Ave., Newark, N. J.
Franklin Research Co., 5134 Lancaster Ave., Phila.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Haag Laboratories, 6101 S. May St., Chicago
Harley Soap Co., Pierce & Orthodox Sts., Philadelphia.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Kranich Soap So., 60 Richards St., Brooklyn
Lewis Soap & Chem. Co., 2210 San Pablo Ave. Oakland, Calif.
National Oil Products Co., Harrison, N. J.
Peck's Prods. Co, 5240 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati
Puritan Chem. Co., Atlanta, Ga.
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., Rochester, N. Y.
Sanitary Soap Co., 104 Railroad Av. Paterson, N. J.
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
S. S. Stafford, Inc., 603 Washington St., N. Y.
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Swift & Co., Chicago
Thompson-Hayward Chem. Co., Kansas City, Mo.
Trojan Prods. & Mfg. Co., 3130 S. Wabash Ave., Chicago
J. A Tumbler Labs., 423 Hanover St., Baltimore
Twi-Laq Chemical Co., N. Portland Ave., Bklyn.
Uncle Sam Chemical Co., 329 E. 29th St., N. Y.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Universal Chem. Corp., Akron, O.

FLOOR WAXES

American Wax Co., 13-26 128th St., College Point, L. I.
Ampion Corp., 47-02—5th St., Long Island City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Buckingham Wax Corp., Van Dam St., & Borden Ave., L. I. City, N. Y.
Candy & Co., 2515 W. 35th St., Chicago
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg., Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods., Co., 3100 Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Laboratories 22-19—37th Ave., Long Island City
Continental Car Na Var Corp., Brazil, Ind.
Davies-Young Soap Co., Dayton, O.
Delta Chem. Co., 4 Payson Ave., N. Y.
Dri-Brite, Inc., 4443 Cook Ave., St. Louis
Economics Laboratory, St. Paul
Empire Chemical Prods. Co., 10 Longworth St., Newark, N. J.
Federal Varnish Co., 337 S. Peoria St., Chicago
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Franklin Research Co., 5134 Lancaster Ave., Philadelphia
Fuld Bros., 702 S. Wolfe St., Baltimore
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hunt Mfg. Co., Lisbon Rd, Cleveland
Hysan Prods. Co., 58 E. Cullerton St., Chicago

FLOOR WAX PROFITS SHINE BRIGHTEST

WHERE *Bright Beauty* GOES!

So easy to spread . . . so quick to dry . . . so beautifully lustrous . . . no wonder *Bright Beauty* outsells competitive products wherever quality is a consideration. This self-polishing floor wax dries without streaks and without slipperiness. It has a pleasing odor and light color. The emulsion remains stable for a long period of time and in all sorts of weather.

Being on the "soft" side, *Bright Beauty* can be buffed to an extremely high lustre, and traffic marks are readily blended. When re-waxing is necessary, *Bright Beauty* is easily removed.

Use *Bright Beauty* as your quality sales leader. Write today for experimental samples and prices.

"CASH-IN" WITH THESE OTHER MONEY-MAKERS FROM CANDY & CO.

Bright Beauty Concentrated CREAM POLISH—This remarkable furniture polish is: (1) ECONOMICAL—May be diluted with several times its own volume of water. A little goes a long way. (2) QUICK—Spreads rapidly and is quickly buffed to a brilliant lustre. (3) DURABLE—Resists moisture and water spotting, does not easily finger-print, may be frequently repolished. (4) "NON-SMOKING"—Will not gather dust or "smoke up."

Bright Beauty Heavy Duty PASTE CLEANER—For cleaning practically all types of surfaces such as: Glass, steel, composition, nickel, copper, brass, enamel, painted wall, terrazzo, aluminum, linoleum, marble, tile, etc. Adheres easily to cloth or pad, and readily adapts itself to the surface to be cleaned. Will not "ball up" after being spread out, nor "run away" from cloth, sponge or cleaning pad. Abrasive content is carefully graded for quick action without scratching.

Spirit Type LIQUID WAXES • Liquid PREPARED WAXES
Prepared PASTE WAXES

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Bright Beauty products are sold through distributors only* . . . never direct to the consuming trade. It is our unalterable policy never to compete with our jobbers. Packed in attractive containers under your own label. Competitively priced, yet can be sold so as to allow you a liberal margin of profit.

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CANDY & CO., INC. 2515 W. 35th ST. CHICAGO

Wax Specialists for Over 40 Years

Makers of Paste Wax, Spirit Liquid Waxes, Powdered Dance Floor Wax, Concentrated Cream Furniture Polish, Paste Cleaners

FLOOR WAXES (Contd.)

La Maison Prods., Inc., 80 York St., Brooklyn
Lewis Soap & Chem. Co., 2210 San Pablo Ave., Oakland, Calif.
M. & H. Laboratories, 2703 Archer Ave., Chicago
Nu Wax On Prods. Mfg. Corp., 317-A 37th St., Brooklyn
Palmer Products, Inc., Waukesha, Wis.
Peck's Prods., 5240 N. 2nd St., St. Louis
Perrow Chemical Co., Hunt, Va.
Puritan Chem. Co., Atlanta, Ga.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., **Paterson, N. J.**
Shawmut Specialty Co., 311 Centre St., Boston
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
S. S. Stafford, Inc., 603 Washington St., N. Y.
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
H. F. Staples Co., Medford, Mass.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Trojan Prods. & Mfg. Co., 3130 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Twi-Laq Chemical Co., 25 N. Portland Ave., Brooklyn
Twin City Shellac Co., 340 Flushing Ave., Brooklyn
Uncle Sam Chemical Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 Western Ave., Chicago
Universal Chem. Corp., Akron, O.
Victory Chem. Co., 148 Fairmount Ave., Phila.
T. F. Washburn Co., 2244 Elston Ave., Chicago
Windsor Wax Co., Inc., 611 Newark St., Hoboken, N. J.

FLOTATION OILS

Armour & Co., 1355 W. 31st St., Chicago
Barrett Co., 40 Rector St., N. Y.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Cliffs Dow Chemical Co., Marquette, Mich.
Crosby Naval Stores, Picayune, Miss.
Glidden Co., Southern Pine Chem. Co. Div., Jacksonville, Fla.
A. Gross & Co., 295 Madison Ave., N. Y.
Hardwood Chemical Co., 2 Jersey St., Buffalo, N. Y.
Hercules Powder Co., Wilmington
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Koppers Co., Koppers Bldg., Pittsburgh
National Aniline & Chemical Co., 40 Rector St., N. Y.
Newport Industries, Inc., 230 Park Ave., N. Y.
Pittsburgh Coal Carbonization Co., Oliver Bldg., Phila.
Reilly Tar & Chemical Corp., Indianapolis, Ind.
Republic Chemical Co., 94 Beekman St., N. Y.
Sherwood Refining Co., Englewood, N. J.
L. Sonneborn Sons, Inc., 88 Lexington Ave., N. Y. C.
Tennessee Eastman Corp., Kingsport, Tenn.
Woburn Degreasing Co., Harrison, N. J.

FLUORIDES

(see also Dealers)

Aluminum Co. of America, Gulf Bldg., Pittsburgh
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
American Fluoride Corp., 151 W. 19th St., N. Y.
Blockson Chemical Co., Joliet, Ill.
Foote Mineral Co., 1609 Summer St., Philadelphia
General Chemical Co., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
Lindsay Light & Chem. Co., West Chicago, Ill.
Merck & Co., Rahway, N. J.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pfaltz & Bauer, 350 Fifth Ave., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

FLY SPRAYS (see HOUSEHOLD INSECTICIDE SPRAYS)

FOAMING AGENTS (see SAPONIN)

FOOT BATHS (Rubber)

U. S. Rubber Co., Market & South Sts., **Passaic, N. J.**

FORMALDEHYDE

(see also Brokers and Dealers)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Cliffs-Dow Chem. Co., Marquette, Mich.
Delta Chem. & Iron Co., Wells, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Wm. S. Gray Co., 342 Madison Ave., N. Y.
Hercules Powder Co., Wilmington, Del.
Heyden Chem. Co., 50 Union Sq., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chemical Work, St. Louis, Mo.
Merck & Co., Rahway, N. J.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

FORMALDEHYDE CANDLES

Bauer & Black, Chicago
Cenol Co., 4250 N. Pulaski Ave., Chicago
Depree Chem., Holland, Mich.

FRAMES (Soap)

Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259 49th St., Brooklyn
Littleford Bros., 451 E. Pearl St., Cincinnati
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago

FULLERS EARTH

American Colloid Co., 363 W. Superior St., Chicago
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Atlantic Refining Co., 260 S. Broad St., Philadelphia
Attapulgus Clay Co., 260 So. Broad St., Phila.
Chas. B. Chrystal Co., 16 Hudson St., N. Y.
A. C. Drury & Co., 219 East North Water St., Chicago
Filtrol Corp., 634 S. Spring St., Los Angeles
Fullers Earth Co., 2049 E. 100th St., Cleveland
Hammill & Gillespie, 225 Broadway, N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Jas. H. Rhodes & Co., 157 W. Hubbard St., Chicago
L. A. Salomon & Bro., 216 Pearl St., N. Y.
Sinclair Refining Co., East Chicago, Ind.
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
A. E. Starkie, 5461 W. Division St., Chicago
Tamms Silica Co., 228 N. La Salle St., Chicago
United Clay Mines Corp., 101 Oakland St., Trenton, N. J.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.

FUMIGANTS (Cyanides, Chlorpicrin, Methyl Bromide, etc.)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Commercial Solvents Corp., Terre Haute, Ind.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.

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Contracting and Consulting Chemical Engineers

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Specialists in the Soap, Glycerine, Fat and Oil Industries

Complete Plants and Engineering Services for:

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Refining, Bleaching and Deodorizing Oils
Hydrogenation of Oils
Hydrogen
Vegetable Ghee
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Evaporation in Single, Double and Multiple Effects
Fat Splitting: Eisenlohr Continuous Process
Twitchell and Autoclave Processes
Stearic Acid and Red Oil
Fatty Acid Distillation
Laundry and Toilet Soaps
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Development of Processes, Reports, Investigations

W & S GLYCERINE EVAPORATORS

The improved WURSTER & SANGER Soap Lye Evaporator constitutes a marked advance in calandria design. Positive circulation of liquor in a definite direction has proved to increase the rate of evaporation and promote the separation of large crystals.

The WURSTER & SANGER Sweet-Water Evaporator has fulfilled the long need of complete accessibility for cleaning of tubes. It is equipped with an external heating element which affords high liquid velocity and a high rate of heat transfer.

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Our Continuous Glycerine Refining Plants represent the most modern and economical equipment for the production of Dynamite, High Gravity and C. P. grades from Crude. We have developed a plant which is an improvement over all former methods of distilling glycerine.

Our plants are producing C. P. glycerine in one distillation with yields of over 98% from Soap Lye Crude and low steam consumption. All glycerine is condensed in concentrated form eliminating the handling of sweet-waters. Continuous operation and automatic controls reduce the operating attention to a minimum.

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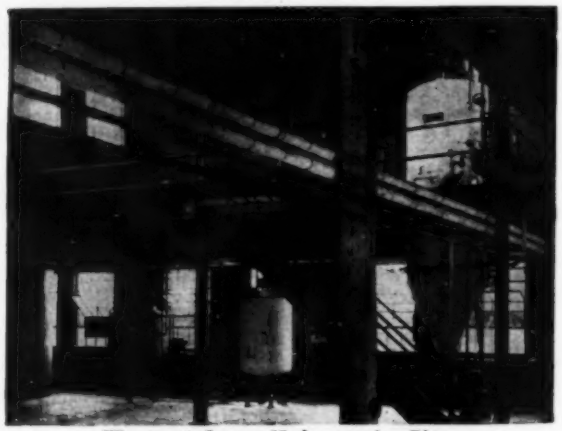
WURSTER & SANGER Oil Refining and Deodorizing Plants for the production of edible oils are suitable for cottonseed, corn, soya bean, peanut, cocoanut and other oils. Our equipment, processes and services cover completely all phases of this industry.

HYDROGENATION PLANTS

WURSTER & SANGER Oil Hardening Plants are built for partially or completely hardening vegetable oils, fish oils, lard and tallow, for edible and technical purposes.

Our plants are simple, efficient and economical in operation and give uniform products of highest quality.

Wurster & Sanger Continuous Glycerine Distillation Plant



Wurster & Sanger Hydrogenation Plant

W & S CATALYST REDUCER

The operation of the WURSTER & SANGER Wet Catalyst Reducer is completely automatic, resulting in a uniform catalyst of the greatest activity, longest life and less susceptible to poisons. The hazards encountered in dry reduction methods are eliminated. Operating costs are extremely low.

FATTY ACID DISTILLATION

WURSTER & SANGER Fatty Acid Distillation Plants, Continuous and Batch Type, are of improved design and construction throughout. Operation is under high vacuum and at low temperature, producing a superior quality of distilled fatty acids with high yields.

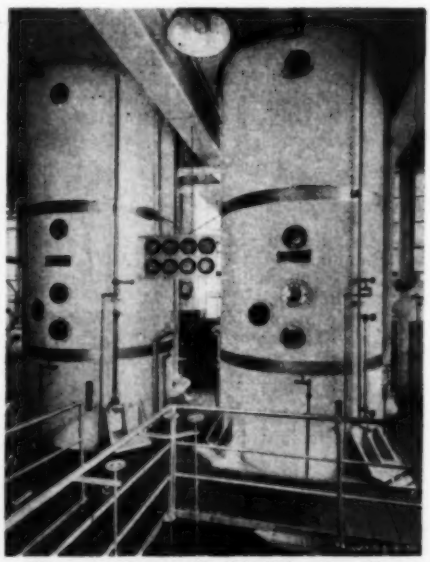
SOAP AND SOAP POWDER PLANTS

We specialize in the design and building of soap plants. Our Spray-Process Soap Powder Plant is producing soap powder at the lowest production cost.

ESTIMATES AND QUOTATIONS

We are glad to furnish information and quotations covering any equipment from the smallest part of an installation to complete plants for the manufacture of products from fats and oils.

Your inquiries will have our prompt consideration.



Wurster & Sanger Double Effect Soap Lye Glycerine Evaporator

FUMIGANTS (Contd.)

Innis, Speiden & Co., 117 Liberty St., N. Y.
Kay-Fries Chemicals, Inc., 180 Madison Ave., N. Y.
Mechling Bros. Chemical Co., Camden, N. J.
Rohm & Haas Co., Inc., 222 W. Washington Sq., Philadelphia
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.
Wyandotte Chem. Corp., Wyandotte, Mich.

GAS MASKS

Davis Emergency Equip. Co., 43 Halleck St., Newark, New Jersey
Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh, Pa.

GAUGES (see INSTRUMENTS)

GERANIOL (see AROMATIC CHEMICALS)

GERANIUM OIL (see ESSENTIAL OILS)

GERANYL ACETATE (see AROMATIC CHEMICALS)

GLASS BOTTLES and JARS (see BOTTLES)

GLASS and WINDSHIELD CLEANERS

Ampion Corp., 47-02—5th St., Long Island City, N. Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Calif.
Buck-Jack Co., 3056 Federal St., Baltimore
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., Long Island City
Delta Chem. Co., 4 Payson Ave., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., Kensington, Philadelphia
Goulard & Olena, Inc., 140 Liberty St., N. Y.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hull Co., 305 Washington St., Brooklyn
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Industrial Labs., 17-19 W. Conway St., Baltimore
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Lewis Soap & Chem. Co., Oakland, Calif.
M. & H. Laboratories, 2703-5 Archer Ave., Chicago
National Oil Products Co., Harrison, N. J.
Palmer Products, Inc., Waukesha, Wis.
Puritan Chem. Co., Atlanta
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
John Sunshine Chem. Co., 604 W. Lake St., Chicago
Transmotive Labs., 2550 S. Michigan Ave., Chicago
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Wilco Co., 6800 McKinley Ave., Los Angeles

GLUES (see ADHESIVES)

GLYCERINE (Refined)

Armour & Co., 1355 W. 31st St., Chicago
Century Stearic Acid Candle Wks., 41 E. 42nd St., N. Y.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
E. F. Drew & Co., Wecoline Div., Boonton, N. J.
Garrigues, Stewart & Davies, Inc., 40 Rector St., N. Y.
A. Gross & Co., 295 Madison Ave., N. Y.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Lever Bros. Co., Cambridge, Mass.
Los Angeles Soap Co., Los Angeles, Calif.
National Oil Products Co., Harrison, N. J.
Leo Pasternak, 110 William St., N. Y. (Brokers)
Procter & Gamble Co., Cincinnati
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
C. J. Schellings & Co., 251 Pearl St., N. Y. (Brokers)
Swift & Co., Union Stock Yards, Chicago
M. Werk Co., St. Bernard, Cincinnati
Allen B. Wrisley Co., 6801 West 65th St., Chicago

GLYCERINE PLANTS AND EQUIPMENT

E. B. Badger Co., 25 Pitts St., Boston
William Garrigue & Co., 9 S. Clinton St., Chicago
Alan Porter Lee, Inc., 136 Liberty St., N. Y.
Ernest Scott & Co., Fall River, Mass.
Swenson Evaporator Co., Harvey, Ill.
Wurster & Sanger, 5201 S. Kenwood Ave., Chicago

GREASES (Fats for Soap)

Armour & Co., 1355 W. 31st St., Chicago
Belleville Rendering Co., Belleville, Ill.
Consolidated Rendering Co., 178 Atlantic Ave., Boston
Cudahy Packing Co., 221 N. La Salle, Chicago
Darling & Co., 4201 S. Ashland Ave., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
Otto A. C. Hagen Co., 929 Ledger Bldg., Philadelphia
Long Island Soap Co.,
Meeker Ave. & Bridgewater St., Brooklyn
N. I. Malmstrom & Co., 147 Lombardy St., Brooklyn
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago
Procter & Gamble Co., Cincinnati
Willibald Schaefer Co., Foot of Bremen Ave., St. Louis
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Louis Stern Sons, Inc., Produce Exchange, N. Y.
Swift & Co., Chicago
Theobald Industries, Kearney, N. J.
Toledo Tallow Co., Toledo, Ohio
Waltham Tallow Co., Waltham, Mass.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Wilson & Co., Union Stock Yards, Chicago
Wilson-Martin Co., Swanson St., Philadelphia
Woburn Degreasing Co., Harrison, N. J.

GREASES, LUBRICATING (See PETROLEUM BASES)

GREEN SOAP (see POTASH SOAP)

GRINDING MACHINERY (for milling, pulverizing, etc.)

Abbe Engineering Co., 50 Church St., N. Y.
American Pulverizer Co., 18th & Austin Sts., St. Louis
C. O. Bartlett & Snow Co., 6200 Harvard Ave., Cleveland
Brill Equipment Corp., 133 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Gruendler Patent Crusher & Pulverizer Co.,
900 N. First St., St. Louis
B. F. Gump Co., 412 S. Clinton St., Chicago
Houchin Machy. Co., Hawthorne, N. J.
Huber Machine Co., 259 46th St., Brooklyn
Kent Machine Works, 39 Gold St., Brooklyn
Lancaster Iron Works, Lancaster, Pa.
J. M. Lehmann Co., 248 Broadway, N. Y.

18 CLASSIFICATIONS of SCIENTIFICALLY PRODUCED SOAPS . . .

CHEMICALLY BALANCED *for* PERFORMANCE *and* ECONOMY—

Satisfy ALL YOUR SOAP DEMANDS!

Check over this list. You'll find a product for every soap requirement you have—you'll find a full line of related soaps from one source—you'll find the highest quality chemically controlled and balanced soaps.

- Auto Soaps
- Chip Soaps (and flakes)
- Cleansers
- Dry Cleaning Soaps
- Hand Soap (powdered)
- Hotel Soaps
- Laundry Soaps
- Laundry Soaps (chips)
- Laundry Soaps (powdered and granulated)
- Liquid Soaps
- Medicinal Soap (cake)
- Oil Soaps
- Scouring Powder
- Scrubbing Soap (liquid)
- Soap Powders
- Textile Soaps
- Toilet Soaps
- Washing Powder

Our 321 branch houses blanketing the nation insure speedy delivery of your orders. Make it a point to call the Armour representative today to discuss your soap needs.

If You—

require a soap that is not listed, or need the help of a soap engineer, please let us know. Our Chemical Research Department is always available, at no obligation to you, for consultation on your problems.

ARMOUR and COMPANY

INDUSTRIAL SOAP DEPARTMENT

1355 WEST 31st STREET, CHICAGO, ILLINOIS

GRINDING MACHINERY (Contd.)

Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Olsen & Tilgner Mfg. Co., 2276 Elston Ave., Chicago
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Prater Pulverizer Co., 1829 S. 55th Ave., Chicago
Chas. Ross & Sons, 150 Classon Ave., Brooklyn
Patterson Foundry & Machine Co., East Liverpool, Ohio
Sprout Waldron & Co., Muncy, Pa.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Stephens-Adamson Mfg. Co., Aurora, Ill.
F. I. Stokes Machine Co., Philadelphia, Pa.
Sturtevant Mill Co., Harrison Sq., Boston
Williams Patent Crusher & Pulverizer Co., St. Louis

GUMS

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
C. W. Campbell Co., 157 Chambers St., N. Y.
T. G. Cooper & Co., 47 N. 2nd St., Philadelphia
Dodge & Olcott Co., 180 Varick St., N. Y.
A. C. Drury & Co., 219 East North Water St., Chicago
R. Gesell, Inc., 200 W. Houston St., N. Y.
Hercules Powder Co., Wilmington, Del.
J. L. Hopkins & Co., 220 Broadway, N. Y.
I. S. Innes Corp., 533 Canal St., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
George H. Lincks, 155 John St., N. Y.
Neuman-Buslee & Wolfe, 224 W. Huron St., Chicago
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
R. J. Prentiss & Co., 80 John St., N. Y.
J. H. Redding, Inc., 17 Battery Place, N. Y.
R. F. Revson Co., 144 W. 18th St., N. Y.
Rohm & Haas Co., 222 W. Washington Sq., Philadelphia
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
William H. Scheel, Inc., 38 Franklin St., Bklyn.
Stein Hall & Co., 285 Madison Ave., N. Y.
Stephens-Adamson Co., Aurora, Ill.
Stroock & Wittenberg, Lincoln Bldg., N. Y.
Thurston & Bradich, 286 Spring St., N. Y.
Arthur C. Trask Co., 4102 S. La Salle St., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

GUNS, POWDER (see BELLOWS, INSECT POWDER)

GYM-FINISH FLOOR SEAL (see FLOOR FINISHES)

HAND (Mechanic's) SOAP

Ampion Corp., 4-88 47th Ave., Long Island City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour & Co., 1355 W. 31st St., Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Buck-Jack Co., 3056 Federal St., Baltimore
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Cole Labs., 22-19—37th Ave., L. I. City
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Columbia Soap & Chem. Co., Inc., 324 Leavenworth St., San Francisco
Cudahy Packing Co., 221 N. La Salle St., Chicago
Davies Young Soap Co., Dayton, O.
Delta Chemical Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
A. C. Fergusson Co., Drexel Bldg., Phila.
Flash Chem. Co., 160 2nd St., Cambridge, Mass.
Fuld Bros., 702 S. Wolfe St., Baltimore
Haag Labs., 6101 S. May St., Chicago
Haskins Bros. & Co., Omaha
Hewitt Soap Co., Dayton, O.
Higley Chem. Co., Dubuque
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Co., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Insto Co., 110 Center St., Los Angeles
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Cal.
Mione Mfg. Co., Collingdale, Pa.
National Sanitary Prods. Co., 217 N. 2nd St., St. Louis
North Coast Soap & Chem. Wks., Seattle, Wash.
Palmer Products, Inc., Waukesha, Wis.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati
Puritan Chem. Co., Atlanta, Ga.
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., aPterson, N. J.
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
Skat Co., Hartford, Conn.
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Swift & Co., Chicago
Trojan Products & Mfg. Co., 3107 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
United Cleanser Mfg. Co., Cambridge, Mass.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Utility Co., 636 W. 44th St., N. Y.
Vanco Co., Manchester, Conn.
Vliet Soap Co., 638 Monroe St., Brooklyn
Washine-National-Sands, Inc., 37-02 Northern Blvd., Long Island City.

HAND SOAP, Powdered

Ampion Corp., 4-88 47th Ave., Long Island City, N. Y.
Armour & Co., 1355 W. 31st St., Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., L. I. City
J. Eavenson & Sons, Camden, N. J.
Fuld Bros., Baltimore
Hercules Powder Co., Wilmington, Del.
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Co., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Insto Co., 110 Center St., Los Angeles
La Maison Products, Inc., 80 York St., Brooklyn
M & H Laboratories, 2705 Archer Ave., Chicago
National Oil Products Co., Harrison, N. J.
Packwood Mfg. Co., St. Louis
Palmer Products, Inc., Waukesha, Wis.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Port Huron Detergent Co., Port Huron, Mich.
Presto Mfg. Co., Myrtle and Curfew Sts., St. Paul, Minn.
Procter & Gamble Co., Cincinnati
Puritan Chem. Co., Atlanta
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Theo. B. Robertson Prods. Co. 700 W. Division St., Chicago
Rochester Germicide Co., Rochester, N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Swift & Co., Chicago
Trojan Prods. & Mfg. Co., 3130 S. Wabash Ave., Chicago
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Warren Soap Mfg. Co., Cambridge, Mass.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

HARD WATER SOAPS (Salt Water Soaps)

Armour Soap Wks., 1355 W. 31st St., Chicago
Baum's Castorine Co., Rome, N. Y.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago

LETHANE

SYNTHETIC INSECTICIDE CONCENTRATES

products of Rohm & Haas research

LETHANE 384

Used particularly in livestock sprays.

LETHANE 384 SPECIAL

Used in household and industrial sprays.

Concentration of LETHANE 384 or LETHANE 384 Special	Grade of Spray*
3½%	B
4%	A
5%	AA

LETHANE 60

Used in semi-concentrates and in agricultural sprays and dusts.

LETHANE *is a trade mark Reg. U. S. Pat. Off.*

**Bureau of Standards CS72-38*

LETHANE 384 and LETHANE 384 Special provide a major portion of the toxic ingredients of the Nation's household, livestock and industrial sprays. LETHANE 60 is widely used in sprays and dusts for protection of ornamentals and food crops. These aliphatic thiocyanates, made from American raw materials, are the original synthetic organic insecticides developed and manufactured by the Rohm & Haas Company.

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Chemicals including Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes . . . Chemicals for the Leather, Textile and other Industries

HARD WATER SOAP (Contd.)

James Counts Soap Co., 2nd & Washington Aves., St. Louis
Cudahy Packing Co., 221 N. LaSalle St., Chicago
Davies-Young Soap Co., Dayton, O.
James Good, Inc., 2116 E. Susquehanna Ave., Philadelphia
Harley Soap Co., Pierce & Orthodox Sts., Phila., Pa.
Haskins Bros. & Co., Omaha, Neb.
Hewitt Soap Co., Dayton, Ohio
Higley Chemical Co., Dubuque, Iowa
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Calif.
Los Angeles Soap Co., Los Angeles, Calif.
National Oil Products Co., Harrison, N. J.
National Soap Co., 357 South 25th St., Tacoma, Wash.
Newell Gutradt Co., 350 Fremont St., San Francisco, Cal.
North Coast Soap & Chem. Works, Seattle, Wash.
Peck's Prod. Co., 5224 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Union Stock Yards, Chicago
Vliet Soap Co., 638 Monroe St., Brooklyn
Warren Soap Mfg. Co., Cambridge, Mass.
M. Werk Co., St. Bernard, Cincinnati
Allen B. Wrisley Co., 6801 W. 65th St., Chicago, Ill.
Chas. W. Young & Co., 1247 N. 26th St., Philadelphia

HELIOTROPIN (see AROMATIC CHEMICALS)

HOLDERS (Deodorizing Block)

(see also Cans, Fibre)

Chemical Mfg. & Dist. Co., Easton, Pa.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Cin-Made Corp. (fibre), 294 Eggleston Ave., Cincinnati
Clifton Chemical Co., 247 Front St., N. Y.
Eagle Soap Corp., Huntington, Ind.
Edelman Co., 6249 S. St. Lawrence Ave., Chicago
Elkay Products Corp., 323 W. 16th St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Garnet Chem. Corp., 911 N. Lumber St., Allentown, Pa.
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Cal.
National Sanitary Chem. Co., Baltimore, Md.
Palmer Products, Inc., Waukesha, Wis.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., 16 Downing Pl., Rochester N. Y.
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago

HOMOGENIZERS (DISPERSION EQUIPMENT)

Abbe Engineering Co., 50 Church St., N. Y.
Manton-Gaulin Mfg. Co., 19 Charlton St., Everett, Mass.
Wurster & Sanger, 5201 S. Kenwood Ave., Chicago

HORTICULTURAL SPRAY BASE (see PETROLEUM BASES)

HOUSEHOLD AMMONIA (prepared, in bulk and private brand)

Chemical Supply Co., 2450 Canal Rd., Cleveland
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., Long Island City
Fergusson Laboratories, Drexel Bldg., Philadelphia
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., Kensington, Philadelphia
Haag Laboratories, Inc., 6101 S. May St., Chicago
Hockwald Chem. Co., 30 Bluxome St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Merck & Co., Rahway, N. J.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago, Ill.
Shores Co., Cedar Rapids, Iowa
John T. Stanley Co., Inc., 642 W. 30th St., N. Y.
Thompson Hayward Chem. Co., Des Moines, Iowa
Trojan Prods. & Mfg. Co., 3130 S. Wabash Ave., Chicago
Washine-National-Sands, Inc., 37-02 Northern Blvd., Long Island City

HOUSEHOLD INSECTICIDE BASE (see PETROLEUM BASES)

HOUSEHOLD INSECTICIDES, LIQUID

American Mothproof Co., 2330 W. View St., Los Angeles
Ampion Corp., 4-88 47th Ave., Long Island City, N. Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Cal.
Antiseptol Co., 5524 Northwest Highway, Chicago
Baird & McGuire, Inc., Holbrook, Mass.
Baird & McGuire Inc. of Mo., St. Louis
Banner Chemical Co., 329 Mulberry St., Newark, N. J.
Barton Chemical Co., 3907 S. Langley Ave., Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Brilco Labs., 947-61st St., Bklyn.
Cary Mfg. Co., Joliet, Ill.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., Long Island City.
Columbia Soap & Chem. Co., Inc., 324 Leavenworth St., San Francisco
Davies-Young Soap Co., Dayton, O.
Delta Chemical Co., 4 Payson Ave., N. Y.
Derris, Inc., 79 Wall St., N. Y.
C. B. Dolge Co., Westport, Conn.
Elkay Products Corp., 323 W. 16th St., N. Y.
Eagle Soap Corp., Huntington, Ind.
Edelman Co., 6249 S. St. Lawrence Ave., Chicago
Exterminating Materials Co., 555 W. 22nd St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Philadelphia
Goulard & Olena, 140 Liberty St., N. Y.
Haag Laboratories, Inc., 6101 S. May St., Chicago
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
James Huggins & Son, 239 Medford St., Malden, Mass.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Lewis Soap & Chem. Co., Oakland, Calif.
Maywood Pest Exterminators, Maywood, Ill.
McCormick & Co., Baltimore, Md.
M. & H. Laboratories, 2703-5 Archer Ave., Chicago
Midway Chemical Co., 5235 W. 65th St., Chicago
Edgar A. Murray Co., 2703 Guoin St., Detroit
National Sanitary Prods. Co., 217 N. 2nd St. St. Louis
John Opitz Inc., 50-14—39th St., L. I. City
Palmer Products, Inc., Waukesha, Wis.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Perrow Chem. Co., Hurt, Va.
Puritan Chem. Co., Atlanta

ASSOCIATED SPECIALTIES

for

Insecticide Manufacturers

—HI-TOX 20—

Will completely replace Pyrethrum Extract #20 in your formula without addition of any other ingredient. 5% of Hi-Tox 20 will produce an A grade insecticide. Hi-Tox 20 has been used commercially for more than four years and is available without priorities.

— KARPEX —

Especially created for the control of the Carpet Beetle. Formulated from materials that are not poisonous or injurious to fabrics or humans. Available in either oil soluble or water soluble form.

— MORTICIDE —

The leading concentrate for manufacture of bed-bug insecticides. Will not spot, stain or injure any material. Does not deteriorate or lose toxicity with age.

— MORTOLIN —

An effective mothproofing compound that has been successfully used by firms all over the U. S. Available in either oil soluble or water soluble form.

— DER-O-SOL 5-11 —

A concentrated Rotenone Extract. Contains 5% Rotenone and 11% solids. Can be used in all insecticides to enhance their killing power.

— DEODORAL A.C. —

A concentrated deodorant and odor neutralizer. Excellent for hospital, hotel or restaurant use.

•

Write for Further Details

ASSOCIATED CHEMISTS, Inc.

1906 N. HALSTED STREET, CHICAGO, ILL.

— Specialists in Insecticide Materials —

The Perfect Base
for your insecticide is

Penn-Drake INSECTI-SOL

PERMANENTLY ODORLESS

Being a fully refined product, completely freed from all unsaturated and unstable compounds, INSECTI-SOL is permanently odorless. Exhaustive tests in our laboratories and in public testing laboratories conclusively proved that INSECTI-SOL is odorless and stays that way.

100% VOLATILE

Penn-Drake Insecti-sol is 100% volatile, and contains nothing to stain or soil clothing, rugs, drapes, etc.

HIGHER KILL

Its unusual floating and penetrating power insure higher kill.

EXCEEDS NAIDM REQUIREMENTS

INSECTI-SOL considerably exceeds the National Association of Insecticide and Disinfectant Manufacturers' minimum requirements. Below are INSECTI-SOL'S specifications:

A.P.I. Gravity	49	— 50.5
Specific Gravity	0.777	— 0.784
Saybold Vis @ 100° F.	30	— 32 sec.
Flash Point	170	— 180° F.
Fire Point	185	— 195° F.
Initial Boiling Point	385	— 395° F.
Distillation End Point	485	— 495° F.
Unsulphonatable Residue		Above 99%
Color		Water White
Odor		Odorless

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Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., Rochester, N. Y.
Schaeffer Bros. & Powell Mfg. Co., 102 Barton St., St. Louis, Mo.
Selig Co., 336 Marietta St., Atlanta, Ga.
Shell Oil Co., Inc., 50 W. 50th St., N. Y.
Shores Co., Cedar Rapids, Ia.
Sinclair Refining Co., East Chicago, Ind.
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
S. S. Stafford, Inc., 603 Washington St., N. Y.
Standard Oil Co., of Calif., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Standard Oil Co. (Ohio), Midland Bldg., Cleveland
Thompson-Hayward, 2915 S. W. Blvd., Kansas City
Trojan Products & Mfg. Co., 3130 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chemical Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Victory Chem. Co., 148 Fairmount Ave., Philadelphia
Vliet & Co., 638 Monroe St., Brooklyn
White Tar Co., Kearney, N. J.
Robert C. White Co., Chestnut Hill, Phila.
Wilco Co., 6800 McKinley Ave., Los Angeles
York Chemical Co., 424 W. 18th St., N. Y.

HOUSEHOLD INSECTICIDES PASTE, (See ROACH PASTE, PHOSPHOROUS PASTE)

HOUSEHOLD INSECTICIDES, POWDERED

Allaire Woodward & Co., Peoria, Ill.
Ampion Corp., 4-88 47th Ave., Long Island City, N. Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Cal.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., Long Island City
Eagle Soap Corp., Huntington, Ind.
Elkay Products Corp., 323 W. 16th St., N. Y.
Exterminating Materials Co., 555 W. 22nd St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Goulard & Olena, Inc., 140 Liberty St., N. Y.
Haag Laboratories, 6101 S. May St., Chicago
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Lewis Soap & Chem. Co., Oakland, Calif.
Maywood Pest Exterminators, Maywood, Ill.
McCormick & Co., Inc., Baltimore, Md.
McLaughlin Gormley King Co., 1715—5th St., S. E., Minneapolis, Minn.
Midway Chemical Co., 5235 W. 65th St., Chicago
Edgar A. Murray Co., 2703 Guoin St., Detroit
National Sanitary Prods. Co., 217 N. 2nd St., St. Louis
John Opitz, Inc., 50-14 39th St., L. I. City
Palmer Products, Inc., Waukesha, Wis.
Puritan Chemical Co., Atlanta
Ratin Labs., 116 Broad St., N. Y.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., Rochester, N. Y.
Selig Co., 336 Marietta St., Atlanta, Ga.
Shores Co., Cedar Rapids, Ia.
S. S. Stafford, Inc., 603 Washington St., N. Y.
Trojan Products & Mfg. Co., 3107 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chemical Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Victory Chem. Co., 148 Fairmount Ave., Philadelphia
White Tar Co., Kearney, N. J.
York Chemical Co., 424 W. 18th St., N. Y.

HYDROGENATED OILS

Armour & Co., 1355 W. 31st St., Chicago
E. F. Drew & Co., Wecoline Div., Boonton, N. J.
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries, 43 Carew Tower, Cincinnati
W. C. Hardesty Co., Inc., 41 E. 42nd St., N. Y.
Hooker Electrochemical Co., Niagara Falls, N. Y.
Spencer Kellogg & Sons, Buffalo, N. Y.
Procter & Gamble Co., Cincinnati, O.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Welch, Holme & Clark, 563 Greenwich St., N. Y.
Wesson Oil & Snowdrift Co., 21 West St., N. Y.
Wyandotte Oil Co., Wyandotte, Mich.

HYDROGENATION PLANTS (see OIL HYDROGENATION PLANTS)

HYDROSULFITES (Soap Bleaches)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Monsanto Chem. Co., St. Louis
Richards Sales Corp., Warren & Morris St., Jer. City, N. J.
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Royce Chem. Co., Carlton Hill, N. J.

HYDROXYCITRONELLAL (see AROMATIC CHEMICALS)

HYPOCHLORITES (see CHLORINE) (see LAUNDRY BLEACH)

INFUSORIAL EARTH (see ABRASIVES)

INSECT FLOWERS (see PYRETHRUM)

INSECT POWDER (see PYRETHRUM)

INSECT POWDER GUNS (see BELLOWS)

INSECTICIDE BASE OILS (see PETROLEUM BASES)

INSECTICIDE CONCENTRATES, Synthetic

Associated Chemists, Inc., 1906 N. Halsted Ave., Chicago
Dodge & Olcott Co., 180 Varick St., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Hercules Powder Co., Wilmington, Del.
John Powell & Co., 114 E. 32nd St., N. Y.
Rohm & Haas, Inc., 222 W. Washington Sq., Phila.
U. S. Industrial Chem. Inc., 60 E. 42nd St., N. Y.
Velsicol Corp., 120 E. Pearson St., Chicago
Whitmire Research Corp., 339 E. Vandeventer, St. Louis

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Compagnie Duval, 121 E. 24th St., N. Y.
Dodge & Olcott Co., 180 Varick St., N. Y.
P. R. Dreyer Inc., 119 W. 19th St., N. Y.
E. I. Du Pont de Nemours, Wilmington, Del.
Felton Chemical Co., 603 Johnson Ave., Brooklyn
Benj. French, Inc , 160 Fifth Ave., N. Y. C.
Fritzsche Bros., Inc., 76 Ninth Ave., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Geo. Lueders & Co., 427 Washington St., N. Y. C.
Lautier Fils, Inc., 158 W. 18th St., N. Y. C.
Magnus, Mabee & Reynard, Inc., 16 Desbrosses St., N. Y.
New York Aromatics Co., 153 Waverly Pl., N. Y.
Norda Essential Oil & Chem. Co., 601 W. 26th St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y.
Standard Synthetics, Inc., 119 W. 25th St., N. Y. C.
Tombarel Prods. Corp., 12 E. 42nd St., N. Y.
Van Dyk & Co., 57 Wilkinson Ave., Jersey City, N. J.

INSECTICIDE SPREADERS (See Clays)

INSECTICIDE TESTING (see LABORATORIES)

INSECTICIDES (see HOUSEHOLD INSECTICIDES, AGRICULTURAL INSECTICIDES)

INSTRUMENTS, Meters, Gauges, Thermometers, Etc.

Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland
Bausch & Lomb Optical Co., Rochester, N. Y.
S. F. Bowser & Co., Ft. Wayne, Ind.
Bristol Co., Waterbury, Conn.
Brown Instrument Co., Wayne & Windrim Sts., Phila.
Buffalo Meter Co., 2890 Main St., Buffalo, N. Y.
Cambridge Instrument Co., 3732 Grand Cent. Term., N. Y.
G. M. Davis Regulator Co., 2541 S. Washtenaw, Chicago
Eimer & Amend, 633 Greenwich St., N. Y.
Foxboro Co., Foxboro, Mass.
Liquidometer Corp., Long Island City, N. Y.
Pneumercator Co., Sperry Bldg., Brooklyn
Precision Thermometer Co., 1434 Brandywine St., Phila.
Read Machy. Co., York, Pa.
Republic Flow Meters Co., 2240 Diversey Blvd., Chicago
W. A. Taylor & Co., 7300 York Rd., Baltimore
Taylor Instrument Co., Rochester, N. Y.

IONONE (Violet Base) (see AROMATIC CHEMICALS)

ISO-PROPYL ALCOHOL (see ALCOHOL, ISO-PROPYL)

JAPAN WAX (see WAXES)

JARS, GLASS (see BOTTLES)

JASMIN, ARTIFICIAL (see AROMATIC CHEMICALS)

KAOLIN (see CLAYS)

KEROSENE (see PETROLEUM)

KETTLES

Alloy Prods. Corp., 221 Madison St., Waukesha, Wis.
Alsop Engineering Corp., 100 High St., Milldale, Conn.
Aluminum Co. of America, Gulf Bldg., Pittsburgh
Bethlehem Foundry & Mach. Co., Grand Cent. Bldg., N.Y.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
Edge Moor Iron Wks., 30 Rockefeller Plaza, N. Y.
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Lancaster Iron Works, 564 S. Prince St., Lancaster, Pa.
Littleford Bros., 443 E. Pearl St., Cincinnati
Newman Tallow & Soap Machy. Co., 1051 W. 35th St. Chicago
Patterson Foundry & Machine Co., East Liverpool, O.
Pfaudler Co., 89 East Ave., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Sowers Mfg. Co., 1296 Niagara St., Buffalo, N. Y.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
F. J. Stokes Mach. Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.
Stuart & Peterson Co., Burlington, N. J.
H. B. Trout Co., 240 Ohio St., Buffalo, N. Y.

KIESELGUHR (Infusorial Earth) (see ABRASIVES AND FILLERS)

KITS (Wooden) (see PAILS, WOODEN)

LABELING MACHINES (Bottles and Cans)

Alsop Engineering Corp., 100 High St., Milldale, Conn.
Burt Machine Co., Baltimore, Md.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Economic Machinery Corp., Worcester, Mass.
Edward Ermold Co., 652-64 Hudson St., N. Y.
J. L. Ferguson Co., Joliet, Ill.
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp. 819 E. 9th St., N. Y. (Used)
National Labeling Machine Co., 129 W. 19th St., Long Island City, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
New Jersey Machine Corp., Hoboken, N. J.
Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Scientific Filter Co., 12 Franklin Square, N. Y.

LABELING MACHINES (Boxes & Cakes)

Alsop Engineering Corp., 100 High St., Milldale, Conn.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
New Jersey Machine Corp., Hoboken, N. J.
Pneumatic Scale Corp., North Quincy, Mass.
Scientific Filter Co., 12 Franklin Square, N. Y.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Stokes & Smith Co., Summerdale, Phila., Pa.

LABELS

American Lithographic Co., 85 N. 3rd St., Brooklyn
Dennison Mfg. Co., Framingham, Mass.
Foxon Co., Providence, R. I.
Henderson Lithographing Co., Norwood, Cincinnati
R. J. Kittredge Co., 812 W. Superior St., Chicago
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Dairy Laboratories, 2300 Locust St., Phila.
Entomological Testing Labs., 114 E. 32nd St., N. Y.
Hochstadter Laboratories, Inc., 254 W. 31st St., N. Y.
Illinois Chemical Labs., Gridley, Ill.
La Wall & Harrison, 214 S. 12th St., Phila.
Lederer Bacterological Labs., 269 S. 19th St., Phila.
Pease Laboratories, 39 W. 38th St., N. Y.
Samuel P. Sadtler & Son, 210 S. 13th St., Phila.
Seil, Putt & Rusby, 16 E. 34th St., N. Y.
Skinner & Sherman, 246 Stuart St., Boston
Foster D. Snell, 305 Washington St., Brooklyn
Stillwell & Gladding, 130 Cedar St., N. Y.

LABORATORY ANIMALS

Albino Farms, Red Bank, N. J.
Breeding & Lab. Inst., 619 Kent Ave., Brooklyn

LABORATORY APPARATUS

Central Scientific Co., 1700 W. Irving Pk., Chicago
Eastern Engineering Co., 45 Fox St., New Haven, Conn.
Eimer & Amend, 633 Greenwich St., N. Y.
Fisher Scientific Co., Pittsburgh
Emil Greiner Co., 161—6th Ave., N. Y.
Laboratory Construction Co., 111 Holmes St., Kansas City, Mo.
Scientific Materials Co., Pittsburgh
Arthur H. Thomas Co., Wash Sq., Phila.
Will Corp., Rochester, N. Y.

LABORATORY CHEMICALS

J. T. Baker Chemical Co., Phillipsburg, N. J.
General Chemical Co., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Mallinckrodt Chemical Works, 3600 N. 2nd St., St. Louis
Merck & Co., Rahway, N. J.
Pfaltz & Bauer, Inc., 350 5th Ave., N. Y.

LANOLIN

Bopf-Whittam Corp., Linden, N. J.
Botany Worsted Mills, Passaic, N. J.
Hummel Chemical Co., 90 West St., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Lanaetex Prods. Sales Corp., Elizabeth, N. J.
N. I. Malmstrom & Co., 147 Lombardy St., Brooklyn
Merck & Co., Rahway, N. J.
Pfaltz & Bauer, Inc., 350 5th Ave., N. Y.
Robinson-Wagner Co., 110 E. 42nd St., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Welch, Holme & Clark, 563 Greenwich St., N. Y.

LAUNDRY BLEACH (Sodium Hypochlorite)

American Soap & Washoline Co., Cohoes, N. Y.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chrisman Supply Co., Fayetteville, N. Y.
Cole Labs., 22-19—37th Ave., Long Island City
Delta Chemical Mfg. Co., 2101 Washington Blvd., Baltimore
Higley Chemical Co., Dubuque, Iowa
Hysan Products Co., 58 E. Cullerton St., Chicago
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Legrand Bleach Corp., 111-49th St., Brooklyn
Mathieson Alkali Wks., 60 E. 42nd St., N. Y.
Monsanto Chemical Co., St. Louis, Mo.
Peck's Prods. Co., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
E. M. Sergeant Pulp & Chem. Co., 350 Fifth Ave., N. Y.
Surpass Chemical Co., Albany, N. Y.
Thompson-Hayward Chemical Co., Kansas City, Mo.
Jos. Turner & Co., Ridgefield, N. J.
Westvaco Chlorine Prods. Co., 405 Lexington Ave., N. Y.
Washine-National-Sands, Inc., 37-02 Northern Blvd., Long Island City

LAUNDRY BLUE

American Soap & Washoline Co., Cohoes, N. Y.
Brilco Labs., 947—61st St., Brooklyn
Cowles Detergent Co., 7016 Euclid Ave., Cleveland
Fezandie & Sperrle, 205 Fulton St., N. Y.
Interstate Color Co., 5 Beekman St., N. Y.
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Napthole, Inc., 15 E. 26th St., N. Y.
National Aniline & Chemical Co., 40 Rector St., N. Y.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pylam Products Co., 799 Greenwich St., N. Y.
Washine-National-Sands, Inc., 37-02 Northern Blvd., Long Island City
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

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American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Wks., 1355 W. 31st St., Chicago
Beach Soap Co., Lawrence, Mass.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Cudahy Packing Co., 221 N. La Salle St., Chicago
Du Bois Soap Co., Cincinnati, O.
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
Fels & Co., Philadelphia
Haskins Bros. & Co., Omaha
Hewitt Soap Co., Dayton, O.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Long Island Soap Co., Meeker Ave. & Bridgewater St., Brooklyn
Los Angeles Soap Co., Los Angeles, Calif.
Manhattan Soap Co., Bristol, Pa.
Geo. E. Marsh Co., 200 Broadway, Cambridge, Mass.
National Soap Co., 357 S. 25th St., Tacoma, Wash.
Newell Gutradt Co., 350 Fremont St., San Francisco, Cal.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati
North Coast Chem. & Soap Wks., Seattle, Wash.
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Union Stock Yards, Chicago
Vliet Soap Co., 638 Monroe St., Brooklyn, N. Y.
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
M. Werk Co., St. Bernard, Cincinnati
Allen B. Wrisley Co., 6801 W. 65th St., Chicago, Ill.
Chas. W. Young & Co., 1247 N. 26th St., Phila.

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American Soap & Washoline Co., Cohoes, N. Y.
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Colgate-Palmolive-Peet Co., Jersey City, N. J.
Du Bois Soap Co., Cincinnati, O.
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
Fels & Co., Philadelphia
Haris Soap Co., Buffalo, N. Y.
Haskins Bros. Co., Omaha
Hewitt Soap Co., Dayton, Ohio
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Long Island Soap Co., Meeker Ave. & Bridgewater St., Brooklyn
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Procter & Gamble Co., Cincinnati
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Chas. W. Young & Co., 1247 N. 26th St., Phila.

LAUNDRY SOAP, POWD. AND GRAN.

American Soap Powder Wks., 100 Van Dyke St., Brooklyn, N. Y.
American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Wks., 1355 W. 31st St., Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Beach Soap Co., Lawrence, Mass.
Chemical Mfg. & Dist. Co., Easton, Pa.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Cudahy Packing Co., 221 N. La Salle St., Chicago
Du Bois Soap Co., Cincinnati, O.
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
Haskins Bros. & Co., Omaha
Hewitt Soap Co., Dayton, Ohio
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Los Angeles Soap Co., Los Angeles, Calif.
Geo. E. Marsh Co., 200 Broadway, Cambridge, Mass.
Napthole, Inc., 15 E. 26th St., N. Y.
Nat'l Milling & Chem. Co., Manayunk, Phila.
National Oil Products Co., Harrison, N. J.
National Soap Co., 357 South 25th St., Tacoma, Wash.
North Coast Soap & Chem. Wks., Seattle, Wash.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Cincinnati
John T. Stanley Co., 642 W. 30th St., N. Y.
Stevens Soap Corp., 202 Sullivan St., Brooklyn
Swift & Co., Union Stock Yards, Chicago
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
M. Werk Co., St. Bernard, Cincinnati
Allen B. Wrisley Co., 6801 W. 65th St., Chicago, Ill.
Chas. W. Young & Co., 1247 N. 26th St., Phila.

LAUNDRY SODA, see SODA

LAUNDRY SOURS (Fluoride, etc.)

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American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
American Fluoride Corp., 151 W. 19th St., N. Y.
Blockson Chemical Co., Joliet, Ill.
Chemical Mfg. & Dist. Co., Easton, Pa.
Diamond Alkali Co., 535 Smithfield Ave., Pittsgurgh, Pa.
General Chem. Co., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Hummel Chem. Co., 90 West St., N. Y.
Hysan Products Co., 58 E. Cullerton St., Chicago
Innis, Speiden & Co., 117 Liberty St., N. Y.
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Port Huron Detergent Co., Port Huron, Mich.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Standard Chem. Co., Columbus, O.
John T. Stanley Co., 642 W. 30th St., N. Y. C.
Thompson-Hayward Chemical Co., Kansas City, Mo.
Victor Chemical Wks., 141 W. Jackson Blvd., Chicago
Welch Holme & Clark, Inc., 563 Greenwich St., N. Y.
Chas. W. Young & Co., 1247 N. 26th St., Phila.

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LAURIC ACID (see also FATTY ACIDS)

Armour & Co., 1355 W. 31st St., Chicago
E. F. Drew & Co., Wecoline Div., Boonton, N. J
Woburn Degreasing Co., of N. J., Harrison, N. J.

LAURYL ALCOHOL

E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y. C.
Michel Export Co., 95 Broad St., N. Y.

LEAD ARSENATE

Amer. Agricultural Chem. Co., 50 Church St., N. Y.
American Cyanamid & Chem. Co., 30 Rockefeller Plaza, N. Y.
California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif.
Chipman Chem. Co., Bound Brook, N. J.
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Sherwin-Williams Co., Cleveland, O.

LECITHIN

American Lecithin Corp., Corona Ave., Elmhurst, L. I.
Chemical Novelties Corp., 946 W. 5th St., Cincinnati
W. A. Cleary Corp., New Brunswick, N. J.
Digestive Ferments Co., 930 Henry St., Detroit
Enco Co., 441 Lexington Ave., N. Y.
R. W. Greeff & Co., 10 Rockefeller Plaza, N. Y.
Merck & Co., Rahway, N. J.
Soya Corp. of America, 30 Rockefeller Plaza, N. Y.
A. E. Starkie, 5461 W. Division St., Chicago
Welch Holme & Clark, Inc., 563 Greenwich St., N. Y.
Wilson Labs., 4221 S. Western Blvd., Chicago

LEMON OIL (see ESSENTIAL OILS)

LEMONGRASS OIL (see ESSENTIAL OILS)

LIME (Live and Hydrated)

Aluminum Co. of America, Gulf Bldg., Pittsburgh
California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif.
E. I. Du Pont de Nemours, Wilmington, Del.
Hoosac Valley Lime Co., Adams, Mass.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Lehigh Lime Co., 111 W. Washington St., Chicago
National Gypsum Co., 192 Delaware Ave., Buffalo, N. Y.
Rockland-Rockport Lime Co., Rockland, Maine
William H. Scheel, Inc., 38 Franklin St., Brooklyn
U. S. Lime Prods. Corp., 85 Second St., San Francisco
Whiterock Quarries, Inc., Bellefonte, Pa.
Whittaker, Clark & Daniels, Inc., 260 W. Bway., N. Y.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.

LIME SULFUR

Allen Co., Pittstown, N. J.
California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif.
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.
Sherwin-Williams Co., Cleveland, O.
Shores Co., Cedar Rapids, Iowa
Taylor Chem. Wks., Aberdeen, N. C.

LINALOE OIL (see ESSENTIAL OILS)

LINALOOL (see AROMATIC CHEMICALS)

LINALYL ACETATE (see AROMATIC CHEMICALS)

LINERS (see BAG LINERS)

LINING MACHINERY (Cartons)

Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago

LINSEED OIL

(see also Brokers and Dealers)

Archer-Daniels-Midland Corp., Minneapolis, Minn.
Bisbee Linseed Co., Philadelphia
E. F. Drew & Co., Wecoline Div., Boontown, N. J.
William O. Goodrich Co., Milwaukee, Wis.
Spencer Kellogg & Sons, Buffalo, N. Y.
Kelloggs & Miller, Amsterdam, N. Y.
Minnesota Linseed Oil Co., Minneapolis, Minn.
Pacific Vegetable Oil Corp., 62 Townsend St., San Francisco
Chas L. Read & Co., 120 Greenwich St., N. Y.
J. H. Redding, Inc., 17 Battery Place, N. Y.
A. E. Starkie Co., 5461 W. Division St., Chicago
Welch Holme & Clark Co., 563 Greenwich St., N. Y.

LINSEED OIL SOAP (see POTASH SOAPS)

LIQUID SOAP AND BASE (see POTASH SOAP)

MACHINERY (Used) (see USED MACHINERY)

MAGNESIUM CARBONATE

American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Hercules Powder Co., 961 Market St., Wilmington, Del.
Innis-Speiden & Co., 117 Liberty St., N. Y.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.

MAGNESIUM OXIDE

American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis-Speiden & Co., 117 Liberty St., N. Y.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.

MAGNESIUM STEARATE (see STEARATES)

MANILA GUMS

Gillespie-Rodgers-Pyatt Co., 80 John St., N. Y.
O. G. Innes Corp., 533 Canal St., N. Y.
Wm. H. Scheel, Inc., 38 Franklin Street, Brooklyn
Stroock & Wittenberg Corp., 60 E. 42nd St., N. Y.

MARINE SOAPS (see SALT WATER SOAPS)

MECHANIC'S SOAP (see HAND SOAP)

MARSEILLES SOAP (see TEXTILE SOAPS)

MEDICINAL SOAPS, CAKE

Armour Soap Wks., 1355 W. 31st St., Chicago
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
Hewitt Soap Co., Dayton, O.
Los Angeles Soap Co., Los Angeles, Calif.
Newell Gutradt Co., 350 Fremont St., San Francisco, Cal.
Procter & Gamble Co., Cincinnati
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

MEDICINAL SOAPS, LIQUID (see POTASH SOAPS)

MENTHOL

(see also Essential Oils)

S. W. Bridges & Co., 82 Wall St., N. Y.
Dodge & Olcott Co., 180 Varick St., N. Y.
P. R. Dreyer, 119 W. 19th St., N. Y.
Fritzsche Bros., Inc., 76 Ninth Ave., N. Y.
Magnus, Mabee & Reynard, Inc, 16 Desbrosses St., N. Y.
A. Maschmeijer, Jr., Inc., 45 W. 16th St., N. Y.
McKesson & Robbins, Inc., 155 E. 42nd St., N. Y.
Norda Essential Oil & Chem. Co., 601 W. 26th St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
R. J. Prentiss & Co., 80 John St., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y.
Sherka Chemical Co., 86 Orange St., Bloomfield, N. J.
Standard Synthetics, Inc., 119 W. 25th St., N. Y.
Tombarel Prods., 12 E. 22nd St., N. Y.

MERCURY BICHLORIDE (Corrosive Sublimate)

General Chemical Co., 40 Rector St., N. Y.
Heyden Chemical Corp., 50 Union Sq., N. Y.
Mallinckrodt Chemical Works, St. Louis
Merck & Co., Rahway, N. J.
New York Quinine & Chem. Wks., N. 11th & Berry Sts., Brooklyn
Chas. Pfizer & Co., 81 Maiden Lane, N. Y.
Wood Ridge Mfg. Co., Wood Ridge, N. J.

METAL CAPS (see CAPS, METAL)

METAL POLISH (see POLISH)

METAL RECEPTACLES (Waste Baskets, Spittoons, etc., Garbage Pails & Barrels)

Justrite Mfg. Co., 2061 N. Southport Ave., Chicago
F. H. Lawson Co., Cincinnati
National Enameling & Stamping Co., Milwaukee, Wisc.
Solar Receptacle Co., Melrose Park, Ill.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Wheeling Corrugating Co., Wheeling, W. Va.,
Witt Cornice Co., 2118 Winchell Ave., Cincinnati

METALLIC SOAPS (see STEARATES)

METERS (see INSTRUMENTS)

METHANOL (Synthetic)

Carbide & Carbon Chem. Corp., 30 E. 42nd St., N. Y.
Commercial Solvents Corp., Terre Haute, Ind.
E. I. Du Pont de Nemours & Co., Wilmington, Del.

METHYL ANTHRANILATE

(see also Aromatic Chemicals)

Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours, Wilmington, Del.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Florasynth Labs., Olmstead & Starling Aves., N. Y.
A. Maschmeijer, Jr., Inc., 45 W. 16th St., N. Y.

METHYL CELLULOSE

Dow Chemical Co., Midland, Mich.
Hercules Powder Co., Wilmington, Del.
General Dyestuffs Corp., 435 Hudson St., N. Y.

METHYL SALICYLATE (Artificial Wintergreen)

(see also Aromatic Chemicals)

Dow Chemical Co., Midland, Mich.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Heyden Chemical Corp., 50 Union Sq., N. Y.
Merck & Co., Rahway, N. J.
Monsanto Chemical Works, 1724 S. 2nd St., St. Louis

MILLS, COLLOID (See Colloid Mills)

MILLS, SOAP POWDER (see SOAP MACHINERY & GRINDING MACHINERY)

MILLS, TOILET SOAP (see PETROLATUM)

MINERAL OIL, WHITE (see WHITE MNERAL OIL)

MINERAL SOAP STOCK (see PETROLATUM)

MIRBANE OIL (Nitrobenzine)

(see also Essential Oils)

Calco Chemical Co., Bound Brook, N. J.
E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del.
Monsanto Chemical Works, 1724 S. 2nd St., St. Louis
National Aniline & Chemical Co., 40 Rector St., N. Y.
Naugatuck Aromatics, Inc., 254 Fourth Ave., N. Y.

MIXERS (Portable)

Alsop Engineering Corp., 100 High St., Milldale, Conn.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Products Co., 15 Park Row, N. Y. (Used)
Eastern Engineering Co., 45 Fox St., New Haven, Conn.
Ertel Eng. Co., Kingston, N. Y.
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Frank B. Lomax Co., 365 W. Oak St., Chicago
Mixing Equipment Co., Inc., 1067 Garson Ave., Rochester, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Patterson Fdy. & Mch. Co., E. Liverpool, O.
Pfaudler Co., 89 East Ave., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Read Machy. Co., York, Pa.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)

MIXING MACHINERY (Change Can)

Abbe Engineering Co., 50 Church St., N. Y.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Arthur Colton Co., Detroit, Mich.
Consolidated Products Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Houchin Machy. Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Kent Machine Works, 39 Gold St., Brooklyn
Mixing Equipment Co., Inc., 1067 Garson Ave., Rochester, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Patterson Foundry & Mch. Co., E. Liverpool, Ohio
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Read Machy., Co., York, Pa.
Chas. Ross & Son Co., 150 Classon Ave., Brooklyn
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Waterville Fndry. & Machine Co., Waterville, N. Y.

MIXING MACHINERY (Dry Products)

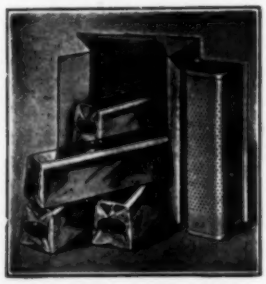
Abbe Engineering Co., 50 Church St., N. Y.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Products Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
B. F. Gump Co., 412 S. Clinton St., Chicago
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Lancaster Iron Works, Lancaster, Pa.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Prater Pulverizing Co., 1829 S. 55th Ave., Chicago
Read Machy. Co., York, Pa.
Robinson Mfg. Co., Muncy, Pa.
Chas Ross & Son Co., 150 Classon Ave., Brooklyn
Sprout Waldron & Co., Muncy, Pa.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Stephens-Adamson Mfg. Co., Aurora, Ill.
F. J. Stokes Machine Co., Philadelphia, Pa.
Struthers-Wells Corp., Warren, Pa.
Aurelio Tanzi Engineering Co., 430 Jefferson St., Bklyn.

MIXING MACHINERY (General)

Alsop Engineering Corp., 100 High St., Milldale, Conn.
Baker-Perkins Co., 250 Park Ave., N. Y.
Beach-Russ Co., 50 Church St., N. Y.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Arthur Colton Co, Detroit
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
Eastern Engineering Co., 45 Fox St., New Haven
Edge Moor Iron Wks., 30 Rockefeller Plaza, N. Y.
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
B. F. Gump Co., 431 S. Clinton St., Chicago
Houchin Machinery Co., Hawthorne, N. J.
S. Howes Co., Inc., Silver Creek, N. Y.
Huber Machine Co., 259—46th St., Brooklyn
Kent Machine Co., 37 Gold St., Brooklyn
Lancaster Iron Works, Lancaster, Pa.
J. M. Lehmann Co., 248 West Broadway, N. Y.
Littleford Bros., 443 E Pearl St., Cincinnati
Mixing Equipment Co., 1067 Garson Ave., Rochester, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Patterson Foundry & Mach. Co., East Liverpool, Ohio
Pfaudler Co., 89 East St., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Prater Pulverizing Co., 1829 S. 55th Ave., Chicago

MANUFACTURER *exclusively for the* JOBBER

For Quality Plus ***—Consult Us!***



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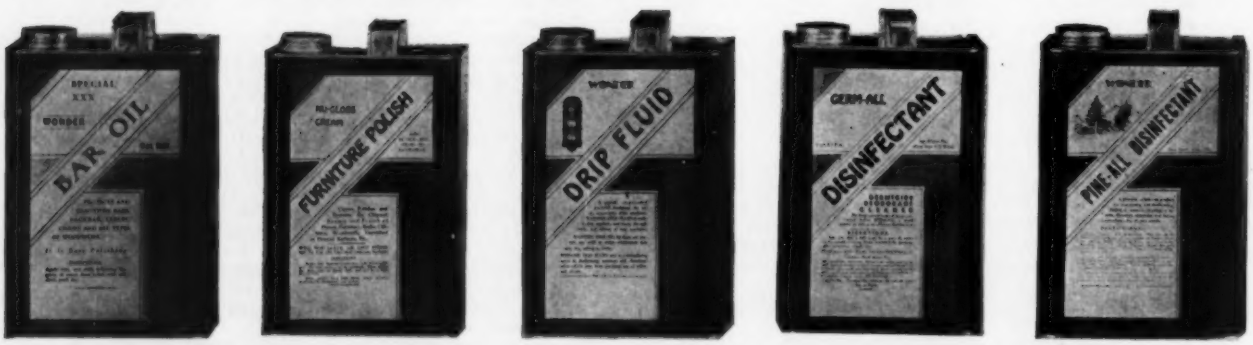

UNCLE SAM CHEMICAL CO., INC.

329 East 29th Street *Established 1915* New York, N. Y.

MIXING MACHINERY (General) (Contd.)

Read Machinery Co., York, Pa.
Robinson Mfg. Co., Muncy, Pa.
Chas. Ross & Son Co., 150 Classon Ave., Brooklyn
Sowers Mfg. Co., 1296 Niagara St., Buffalo, N. Y.
Sprout Waldron & Co., Muncy, Pa.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Stephens-Adamson Mfg. Co., Aurora, Ill.
F. J. Stokes Mach. Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.
Turbo Mixer Corp., 247 Park Ave., N. Y.
Waterville Foundry & Machine Co., Waterville, N. Y.

MONEL METAL EQUIPMENT

Eastern Engineering Co., New Haven, Conn. (Pumps)
Edge Moor Iron Wks., 30 Rockefeller Plaza, N. Y.
Houchin Machinery Co., Hawthorne, N. J.
International Nickel Co., 67 Wall St., N. Y.
Alan Porter Lee, Inc., 136 Liberty St., N. Y.
Littleford Bros., 453 E. Pearl St., Cincinnati
Pfaudler Co., 89 East St., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Sprout Waldron & Co., Muncy, Pa.
F. J. Stokes Machine Co., Phila.
Wurster & Sanger, Inc., 5201 Kenwood Ave., Chicago

MONTAN WAX (see WAXES)

MOP HANDLES

Algoma Mfg. Co., Green Bay, Wis.
Amer. Standard Mfg. Co., 2509 S. Green St., Chicago
Stanley H. Coffin, 12 Pearl St., Boston
Continental Car-Na-Var Corp., Brazil, Ind.
Eagle Woodenware Mfg. Co., Hamilton, O.
Economy Mop Wringer Co., 1944 W. 21st St., Chicago
Erie Mop & Wringer Co., East Rochester, N. Y.
Howard Dustless Duster Co. Boston
W. E. Kautenberg Co., Freeport, Ill.
Massasoit Mfg. Co., 72 Park Pl., N. Y.
Rubon Wood Finishing & Prods. Co., 500 W. 7th St., Kansas City, Mo.
Silver-Chamberlin Co., Clayton, N. Y.
White Mop Wringer Co., Fultonville, N. Y.

MOP WRINGERS AND PAILS

Stanley H. Coffin, 12 Pearl St., Boston
Colson Mfg. Co., Elyria, O.
Dobbins Mfg. Co., Elkhart, Ind.
Eagle Woodenware Mfg. Co., Hamilton, Ohio
Economy Mop Wringer Co., 1944 W. 21st St., Chicago
Geuder, Paesche & Frey, Milwaukee, Wis.
Illinois Duster Co., 1944 Webster Ave,. Chicago
S. C. Lawlor Co., 122 N. Aberdeen St., Chicago
Muskegon Sanitary Supply Co., Muskegon Heights, Mich.
Palmer Prods., Inc., Waukesha, Wis.
Sanitary Mfg. Co., 926 Ft. Wayne Ave., Indianapolis
Sweet Mop Co., 1913 Fremont Ave., South Pasadena, Cal.
Tarbox Lever Corp., 61 Chandler St., Buffalo
White Mop Wringer Co., Fultonville, N. Y.

MOPPING TANKS AND TRUCKS

Eagle Woodenware Mfg. Co., Hamilton, O.
Economy Mop Wringer Co., 1944 W. 21st St., Chicago
S. C. Lawlor Co., 122 N. Aberdeen St., Chicago
Palmer Prods., Inc., Waukesha, Wis.
White Mop Wringer Co., Fultonville, N. Y.

MOPS

Alabama Broom & Mattress Co., Huntsville, Ala.
Algoma Mfg. Co., Green Bay, Wis.
Amer. Standard Mfg. Co., 2509 S. Green St., Chicago
Amer. Textile Prods. Co., 5606 Euclid Ave., Cleveland
Burdett-Rose Mfg. Co., 6100 Independence Rd., Kansas City, Mo.
California Cotton Mills Co., Oakland, Calif.
Chattanooga Broom & Mop Co., Chattanooga, Tenn.
Clark Bros. Mfg. Co., 34 N. Front St., Phila.
Stanley H. Coffin, 12 Pearl St., Boston, Mass.
Continental Car-Na-Var Corp., Brazil, Ind.
Eagle Woodenware Mfg. Co., Hamilton, O.
Howard Dustless Duster Co., Boston, Mass.
Illinois Duster & Brush Co., 1944 Webster Ave., Chicago
W. E. Kautenberg Co., P. O. Box 255, Freeport, Ill.
Klenzall Mfg. Co., Atlanta, Ga.
Palmer Prods., Inc., Waukesha, Wis.
Pioneer Mfg Co., Cleveland, Ohio
Rubon Woodfinishing & Prod. Co., 500 W. 7th St., Kansas City, Mo.
Sanitary Mfg. Co., 926 Ft. Wayne Ave., Indianapolis
Schaefer-Wetcher Co., 445 W. Jefferson Ave., Detroit
Silver-Chamberlain Co., Clayton, N. J.
T. C. Smyth Mfg. Co., Union City, Ind.
Sweet Mop Co., 1913 Fremont Ave., South Pasadena, Cal.
Tate Mfg. Co., Boston, Mass.
M. J. Toohey & Co., Fall River, Mass.
Tuscaloosa Mills, Tuscaloosa, Ala.
Tu-Way Products Co., 445 W. Jefferson Ave., Detroit
Yocma Mills, Water Valley, Miss.

MOSQUITO LARVICIDE

Ampion Corp., 4-88—47th Ave., L. I. City, N. Y.
Baird & McGuire, Inc., Holbrook, Mass.
Baird & McGuire of Mo., St. Louis
Cary Mfg. Co., Joliet, Ill.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Chipman Chemical Co., Bound Brook, N. J.
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19 37th Ave., L. I. City
Davies-Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
James Huggins & Son, 239 Medford St., Malden, Mass.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Prods. Co., 58 E. Cullerton St., Chicago
McCormick & Co., Inc., Baltimore, Md.
Merck & Co., Rahway, N. J.
Palmer Prods., Inc., Waukesha, Wis.
Peck's Products Co., St. Louis
Shell Oil Co., 50 W. 50th St., N Y.
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
Thompson-Hayward Chemical Co., Kansas City, Mo.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Velsicol Corp, 120 E. Pearson St., Chicago
White Tar Co., Kearny, N. J.
York Chem. Co., 424 W. 18th St., N. Y.

MOTH BAGS

Clopay Co., Cincinnati
Kennedy Car Liner Co., Indianapolis
LeMontre Co., Cincinnati
Rosette Co., 200 Tillary St., Brooklyn

MOTH PROOFING COMPOUNDS

American Cyanamid & Chemicals Corp., 30 Rockefeller Plaza, N. Y.
Ampion Corp., 4-88—47th Ave., L. I. City, N. Y.

Reilly
COAL TAR PRODUCTS
FOR THE SOAP
AND DISINFECTANT INDUSTRIES
CRESOLS
U. S. P., Meta Para, Ortho, and special fractions. To all specifications. In drums or tank car quantities for shipment from Indianapolis and Newark.
CRESYLIC ACIDS
The entire range—in standard grades or to buyers' specifications. In drums and tank cars from Indianapolis and Newark.
XYLENOLS
Low boiling, high boiling and symmetrical. In tank cars and drums from Indianapolis and Newark.
TAR ACID OILS
In all grades, from 10% to 75% tar acid content —or of specified phenol coefficiency, carefully blended. In 55-gallon drums and tank cars from Chicago and Newark.
NAPHTHALENE
Crude (70° C. to 78.5° C. melting point) and refined white Naphthalene melting above 79° C. In chipped, crystal, flake and powdered form.
Further information on any of these products will be furnished on request.
Reilly COAL TAR PRODUCTS
REILLY TAR & CHEMICAL CORPORATION
MERCHANTS BANK BLDG., INDIANAPOLIS, IND.
500 FIFTH AVE., NEW YORK
2513 S. DAMEN AVE., CHICAGO
17 PLANTS To Serve The Nation

MOTH PROOFING COMPOUNDS (Contd.)

Associated Chemists, Inc., 1906 N. Halsted Ave., Chicago
Barrett Co., 40 Rector St., N. Y.
Baird & McGuire, Inc., Holbrook, Mass.
Baird & McGuire, Inc., of Mo., St. Louis
Brilco Labs., 947—61st St., Brooklyn
Cenol Co., 4250 N. Crawford Ave., Chicago
Chemical Supply Co., 2450 Canal Rd., Cleveland
Cole Labs., 22-19 37th Ave., L. I. City
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Edelman Co., 6429 S. St. Lawrence Ave., Chicago
Fuld Bros., Inc., 702 S. Wolfe St., Baltimore
General Dyestuffs Corp., 435 Hudson St., N. Y.
R. W. Greeff & Co., 10 Rockefeller Plaza, N. Y.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hooker Electrochemical Co., Niagara Falls, N. Y.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Koppers Co. (White Tar Division), Kearny, N J.
Lewis Soap & Chem. Co., 2210 San Pablo Ave., Oakland, Calif.
Maywood Pest Exterminators, Maywood, Ill.
Merck & Co., Rahway, N. J.
Midway Chemical Co., 5235 W. 65th St., Chicago
Peck's Products Co., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Reilly Tar & Chemical Corp., Indianapolis
Reliable Chemical Co., P. O. Box 361, Passaic, N. J.
Solvay Sales Corp., 40 Rector St., New York
Thompson-Hayward Chemical Co., 2915 S. W. Blvd., Kansas City, Mo.
Trojan Products & Mfg. Co., 3130 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Joseph Turner Co., Ridgefield, N J.
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Whitmire Research Corp., 339 S. Vandeventer, St. Louis

MOTH SPRAYS (see HOUSEHOLD INSECTICIDES, LIQUID)

MOTTLED SOAPS

Hewitt Soap Co., Dayton, O.
Lightfoot Schultz Co., Hoboken, N. J.
Los Angeles Soap Co., Los Angeles
National Soap Co., P. O. Box 1013, Tacoma, Wash.
Peck's Prods. Co., 5224 N. 2nd St., St. Louis
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Chicago
M. Werk Co., Cincinnati, O.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

MOUSE SEEDS (see POISONED SEEDS)

MUSKS, ARTIFICIAL (see AROMATIC CHEMICALS)

MYRISTIC ACID (see also FATTY ACIDS)

Woburn Degreasing Co of N. J., 1200 Harrison Ave., Harrison, N. J.

NAPHTHA (see SOLVENT NAPHTHA)

NAPHTHALENE

American-British Chem. Supplies, 180 Madison Ave.,
Barrett Co., 40 Rector St., N. Y.
S. H. Bell Co., 1407 Gulf Bldg., Pittsburgh
Dominion Tar & Chem. Co., Ltd., Montreal
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
William E. Jordan & Bro., 2590 Atlantic Ave., Brooklyn
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Neville Co., Pittsburgh
Reilly Tar & Chem. Corp., Indianapolis
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Standard Naphthalene Prods. Co., S. Kearny, N. J.

NAPHTHALENE SULFONATES

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
General Dyestuffs Corp., 435 Hudson St., N. Y.
National Aniline & Chem. Co., 40 Rector St., N. Y.
National Oil Products Co., Harrison, N. J.
Pennsylvania Refining Co., Butler, Pa.
Richard Sales Corp., Jersey City, N. J.
L. Sonneborn Sons, 88 Lexington Ave., N. Y.

NAPHTHENIC ACIDS (and Sulfonic Sludges)

Advance Solvents & Chem. Co., 245—5th Ave., N. Y.
Atlantic Refining Co., 260 Broad St., Philadelphia
General Petroleum Corp., 108 W. 2nd St., Los Angeles
Hummel Chem. Co., 90 West St., N. Y.
Nuodex Prods. Co., Elizabeth, N. J.
Pennsylvania Refining Co., Butler, N. J.
Petroleum By-Products Co., 15 Whitehall St., N. Y.
Petroleum Specialties, Inc., 570 Lexington Ave., N. Y.
Shell Petroleum Corp., Shell Bldg., St. Louis
Sherwood Refining Co., Englewood, N. J.
L. Sonneborn Sons, 88 Lexington Ave., N. Y.

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Houchin Machinery Co., Hawthorne, N. J.
International Nickel Co., 67 Wall St., N. Y.
Alan Porter Lee, Inc., 136 Liberty St., N. Y.
Littleford Bros., 453 E. Pearl St., Cincinnati
Lukens Steel Corp., Coatesville, Pa.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
F. J. Stokes Machine Co., Philadelphia
Wurster & Sanger, Inc., 5201 S. Kenwood Ave., Chicago

NICOTINE COMPOUNDS

California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif
E. I. du Pont de Nemours, Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.
Hood River Spray Co., Hood River, Ore.
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Sanocide Spray Co., Fennville, Mich.
Tobacco By-Products & Chem. Corp., Louisville

NITRE CAKE

Amer. Agricultural Chem. Co., 50 Church St., N. Y.
Amer. Cyanamid & Chem. Co., 30 Rockefeller Plaza, N. Y.
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.
Chas. Lennig & Co., 222 W. Washington Sq., Philadelphia
Monsanto Chemical Co., 1724 S. 2nd St., St. Louis
Penna Salt Mfg. Co., Philadelphia
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NITROPARAFFINS

Commercial Solvents Corp., Terre Haute, Ind.

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Illustrated Soap Co., 151 W. 25th St., N. Y.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Unique Soaps, P. O. Box No. 61, Covington, Ky.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

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Robinson, Butler, Hemingway & Co., Bound Brook, N. J.
Struthers Wells Titusville Corp., Warren, Pa.
Wurster & Sanger, Inc., 5201 S. Kenwood Ave., Chicago

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Bauer Bros. Co., Springfield, O.
Buckeye Iron & Brass Works, Dayton, O.
French Oil Mill Mach. Co., Piqua, O.
William Garrigue Co., 9 S. Clinton St., Chicago
Alan Porter Lee, Inc., 136 Liberty St., N. Y.
Robinson, Butler, Hemingway Co., Bound Brook, N. J.
Ernest Scott & Co., Fall River, Mass.
Sprout Waldron & Co., Muncy, Pa.
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OLEIC ACID (see RED OIL)

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(see also Brokers and Dealers)

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T. G. Cooper & Co., 47 N. 2nd St., Phila.
Eastern Industries, Inc., Ridgefield, N. J.
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J. H. Redding Co., 17 Battery Pl., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
E. M. Sergeant Pulp & Chem. Co., 350 Fifth Ave., N. Y.
Smith-Weihman Co., 15 Moore St., N. Y.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

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(see also Brokers and Dealers)

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Otto A. C. Hagen Corp., Public Ledger Bldg., Phila.
J. H. Redding Co., 17 Battery Pl., N. Y.
E. M. Sergeant Pulp & Chem. Co., 350 Fifth Ave., N. Y.
Smith-Weihman Co., 15 Moore St., N. Y.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

OLIVE OIL SOAPS (see CASTILE SOAPS, TEXTILE SOAPS)

ORANGE OIL (see ESSENTIAL OILS)

ORTHODICHLORBENZENE (see listings under PARADICHLORBENZENE)

OXALIC ACID

(see also Dealers)

Amer. Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
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Faesy & Besthoff, Inc., 22 E. 40th St., N. Y.
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Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chemical Wks., St. Louis, Mo.
Merck & Co., Rahway, N. J.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
E. M. Sergeant Pulp & Chem. Co., 350 Fifth Ave., N. Y.
Tamms Silica Co., 228 N. La Salle St., Chicago
Jos. Turner & Co., Ridgefield, N. J.
Victor Chemical Works, 141 W. Jackson Blvd., Chicago

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Bennett Mfg. Co., 14600 Princeton Ave., Chicago
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Gueder, Paeschke & Frey Co., Milwaukee
Inland Steel Container Co., 6532 S. Menard Ave., Chicago
National Can Co., 110 E. 42nd St., N. Y.
National Steel Barrel Co., 3860 E. 91st St., Cleveland
Pittsburgh Can Co., Pittsburgh, Pa.
Pressed Steel Tank Co., 5717 Greenfield Ave., Milwaukee
F. C. Thornton Co., 6712 Union Ave., Cleveland
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Vulcan Stamping & Mfg. Co., 4036 W. Lake St., Chicago
Wheeling Corrugating Co., Wheeling, W. Va.

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Gambrinus Cooperage Works, Louisville
Impervious Package Co., Keene, N. H.
Menasha Woodenware Co., Menasha, Wis.
Richmond Cedar Works, Richmond, Va.

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(see also Brokers and Dealers)

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Irving R. Boody & Co., 120 Wall St., N. Y.
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Spencer Kellogg & Sons, Buffalo, N. Y.
J. H. Redding Co., 17 Battery Pl., N. Y.
Smith-Weihman Co., 15 Moore St., N. Y.
Zimmerman Alderson Carr Co., 25 Broadway, N. Y.

PALM OIL

(see also Brokers and Dealers)

Balfour Guthrie & Co., 67 Wall St., N. Y.
T. G. Cooper & Co., 47 N. 2nd St., Phila.
E. F. Drew & Co., Wecoline Div., Boonton, N. J.

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Pacific Vegetable Oil Corp., 62 Townsend St., San Francisco
J. H. Redding Co., 17 Battery Pl., N. Y.
Smith-Weihman Co., 15 Moore St., N. Y
Stein, Hall & Co., 285 Madison Ave., N. Y. (Sumatra)
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Zimmerman Alderson Carr Co., 25 Broadway, N. Y.

PALM OIL FATTY ACIDS (see FATTY ACIDS)

PAPER CANS (see CANS)

PAPER (Corrugated) (see BOXES, CORRUGATED)

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Fox Paper Co., Lockland, Cincinnati, O.
Hampden Glazed Peper & Card Co., Holyoke, Mass.
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Keller-Dorian Paper Co., 516 W. 34th St., N. Y.
New England Card & Paper Co., Springfield, Mass
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Strobridge Lithographing Co., Cincinnati
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Lenape Trading Co., 233 Broadway, N. Y.
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Oil States Petroleum Co., 233 Broadway, N. Y.
Pennsylvania Refining Co., Butler Pa.
Petroleum Specialties, Inc., 570 Lexington Ave., N. Y.
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Sinclair Refining Co., 630—5th Ave., N. Y.
Smith & Nichols, 121 Maiden Lane, N. Y.
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Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Standard Oil Co., (N. J.), 26 Broadway, N. Y.
Standard Oil Co.(Ohio), Midland Bldg., Cleveland
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Strohmeyer & Arpe Co., 139 Franklin St., N. Y.
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Chas. L. Read & Co., 120 Greenwich St., N. Y.
Sherwood Refining Co., Englewood, N. J.
Sinclair Refining Co., 630—5th Ave., N. Y.
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Skelly Oil Co., Skelly Bldg., Kansas City, Mo.
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Merck & Co., Rahway, N. J.
Sherka Chemical Co., 86 Orange St., Bloomfield, N. J.

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Sherwin-Williams Co., Cleveland

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PEACH KERNEL OIL (see ESSENTIAL OILS)

PEANUT OIL

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Spencer Kellogg & Sons, Buffalo, N. Y.
Pacific Vegetable Oil Corp., 62 Townsend St., San Francisco
J. H. Redding, Inc., 17 Battery Place, N. Y.
E. M. Sergeant Pulp & Chem. Co., 350 Fifth Ave., N. Y.
Smith-Weihman Co., 15 Moore St., N. Y.
Southern Cotton Oil Co., Produce Exchange, N. Y.
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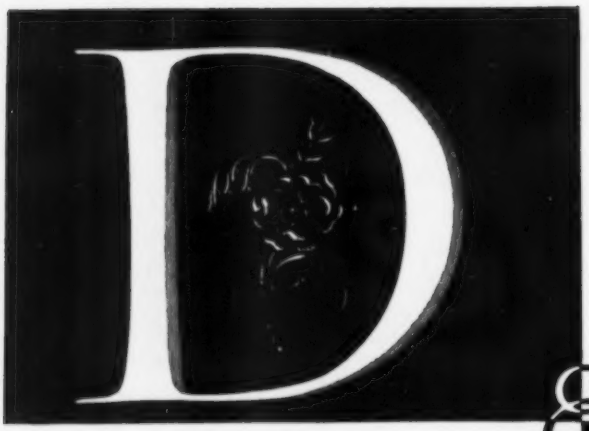

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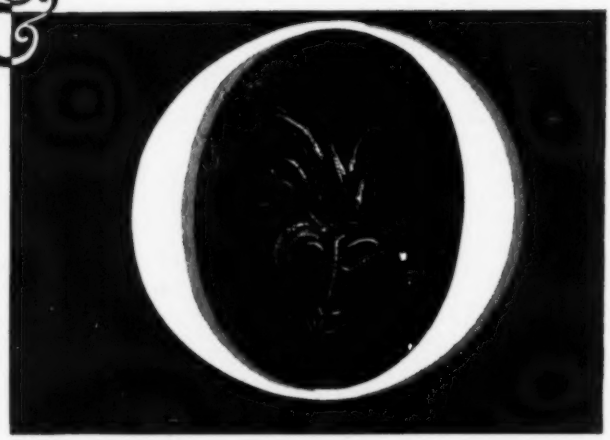

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Ungerer & Co., 161 Sixth Ave., N. Y.
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Pennsylvania Refining Co., Butler, Pa.
Petroleum Specialties, Inc., 570 Lexington Ave., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Shell Oil Co., 50 W. 50th St., N. Y.
Shell Petroleum Corp., Shell Bldg., St. Louis
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Sinclair Refining Co., 630 Fifth Ave., N. Y.
L. Sonneborn Sons, 88 Lexington Ave., N. Y.
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
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Empire Oil Co., Oil City, Pa.
Gulf Refining Co., Frick Annex, Pittsburgh
Indian Refining Co., Lawrenceville, Ind.
Oil Service Co., Warren, Pa.
Pennsylvania Refining Co., Butler, Pa.
Pennzoil Co., Oil City, Pa.
Chas. L. Read & Co., 120 Greenwich St., N. Y.
Shell Oil Co., 50 W. 50th St., N. Y.
Shell Petroleum Corp., Shell Bldg., St. Louis
Sherwood Refining Co., Englewood, N. J.
Sinclair Refining Co., 630 Fifth Ave., N. Y.
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PETROLEUM SPECIALTIES, INC.
570 LEXINGTON AVENUE **NEW YORK, N. Y.**

PHOSPHOROUS PASTE

for ROACHES *and* RATS

Out of more than 69 years experience we have produced PHOSPHOROUS PASTE to meet every demand and need.

J-O PASTE—TYPE "O"

1. Remains soft for a period of months after it is applied.
2. Embodies an attractive Lure for roaches and rats.
3. Does not form a hard surface-shell and is penetrable by insects at all times.
4. Is miscible with water in all proportions.
5. Is applicable to many different types of pest control work.
6. UNEXCELLED for the large specie of roach, such as the American roach, etc.

J-O PASTE—(REGULAR)

For the small specie of Roach (German roach, etc.) This product is UNEXCELLED. It has been used against this type of roach with phenomenal success for the past 69 years.

BOTH TYPES OF J-O PHOSPHOROUS PASTE USED EXTENSIVELY FOR ELIMINATION OF RATS.

Sold in bulk sizes for repackaging (packed in sizes of 25 lbs., 50 lbs., etc.)

Write for Price List

JOHN OPITZ, INC.

Long Island City, New York

Pioneer Manufacturers of

PHOSPHOROUS PASTE *since* 1874

PETROLEUM BASES (Contd.)

Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Standard Oil Co. (N. J.), 26 Broadway, N. Y.
Sun Oil Co., 1608 Walnut St., Philadelphia
Texas Co., 135 E. 42nd St., N. Y.
Tidewater Oil Co., 11 Broadway, N. Y.

PETROLEUM BASE, Deodorized

Anderson-Prichard Oil Corp., Oklahoma City, Okla.
Atlantic Refining Co., 260 S. Broad St., Philadelphia
Commerce Petroleum Co., 2923 Lock St., Chicago
Pennsylvania Refining Co., Butler, Pa.
Chas. L. Read & Co., 120 Greenwich St., N. Y.
Sherwood Petroleum Co., Englewood, N. J.
Sinclair Refining Co., 630-5th Ave., New York
L. Sonneborn Sons, 88 Lexington Ave., N. Y.
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Jos. Turner & Co., Ridgefield, N. J.

PETROLEUM ETHER (see ETHER)

PHENOL (Carbolic Acid)

Barrett Company, 40 Rector St., N. Y.
Dow Chemical Co., Midland, Mich.
Heyden Chemical Corp., 50 Union Sq., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
Monsanto Chemical Works, 1724 S. 2nd St., St. Louis
Reilly Tar & Chem. Corp., Indianapolis

PHENOL-COEFFICIENT DETERMINATIONS (see CONSULTANTS)

PHENYL ACETIC ALDEHYDE (see AROMATIC CHEMICALS)

PHENYL ETHYL ALCOHOL (see AROMATIC CHEMICALS)

pH INDICATORS

Lamotte Chemical Prods., Dept. R., Towson, Baltimore
National Technical Labs., 820 Mission St., South Pasadena, Calif.
W. A. Taylor Co., 7300 York Rd., Baltimore

PHOSPHORUS PASTE

John Opitz, 50-14—39th St., Long Island City, N. Y.
Sennewald Drug Co., 2723 Chouteau Ave., St. Louis

PINE OIL

American Turp. & Tar Co., 810 S. Broad St., New Orleans
E. W. Colledge, General Sales Agent, Inc., P. O. Box 389, Jacksonville, Fla.
Continental Turp. & Rosin Corp., Laurel, Miss.
Crosby Naval Stores, Picayune, Miss.
Dixie Pine Prods. Co., Hattiesburg, Miss.
Glidden Co., Naval Stores Div., Jacksonville, Fla.
Gulf Naval Stores Supply Co., Whitney Bldg., New Orleans
Hercules Powder Co., Wilmington, Del.

PINE OIL (Contd.)

Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
National Turp. Prods. Co., Gulf Point, Fla.
Newport Industries, Inc., 230 Park Ave., N. Y.
Phoenix Naval Stores Co., Gulfport, Miss.
Chas. L. Read & Co., 120 Greenwich St., N. Y.
Southern Pine Chem. Co., Box 389, Jacksonville
Taylor, Lowenstein & Co., Mobile, Ala.
Welch Holme & Clark, Inc., 563 Greenwich St., N. Y.

PINE OIL DISINFECTANTS (see DISINFECTANTS, PINE OIL)

PINE NEEDLE OIL (see ESSENTIAL OILS)

PINE SCRUB SOAPS

American Soap & Washoline Co., Cohoes, N. Y.
Ampion Corp., 4-88—47th Ave., L. I. City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour & Co., 1355 W. 31st St., Chicago
Baird & McGuire, Inc., Holbrook, Mass.
Baird & McGuire, Inc., 1200 Switzer Ave., St. Louis
Banner Chemical Prod. Corp., 329 Mulberry St., Newark, N. J.
Baum's Castorine Co., Rome, N. Y.
Chemical Mfg. & Distrib. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Road, Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., Long Island City, N. Y.
Continental Car-Na-Var Corp., Brazil, Ind.
Churchill Mfg. Co., Galesburg, Ill.
Davies-Young Soap Co., Dayton, O.
Delta Chemical Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2118 E. Susquehanna Ave., Phila.
Haag Laboratories, 6101 S. May St., Chicago
Harley Soap Co., Pierce & Orthodox Sts., Philadelphia
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hysan Products Co., 58 E. Cullerton St., Chicago
Kranich Soap Co., 60 Richards St., Brooklyn
Lewis Soap & Chem. Co., 2210 San Pablo Ave., Oakland, Calif.
Morgan Chemical Co., Harrisburg, Pa.
National Oil Products Co., Harrison, N. J.
Palmer Products, Inc., Waukesha, Wis.
Peck's Prods. Co., 5224 N. 2nd St., St., Louis
Puritan Chem. Co., 209 Peters St., S. W., Atlanta
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., Rochester, N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
Shawmut Specialty Co., 91 Bickford St., Boston
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
John T. Stanley Co., Inc., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Thompson & Hayward Chem. Co., Kansas City, Mo.
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chem. Co., 329 E. 29th St., New York
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
Universal Chem. Corp., 35 E. Market St., Akron, O.
Chas. W. Young & Co., 1247 N. 26th St., Phila.

PINE TAR

E. W. Colledge, General Sales Agent, Inc., P. O. Box 389, Jacksonville, Fla.
Crosby Naval Stores, Picayune, Miss.
Glidden Co., Naval Stores, Div., Jacksonville, Fla.
Gulf Naval Stores Supply Co., Whitney Bldg., New Orleans

SENCO — SENCO — SENCO — SENCO — SENCO — SENCO — SENCO — SENCO — SENCO

*Senco
PHOSPHORUS PASTE

(Commonly called rat and roach paste)

1. **A rat and roach paste manufactured under exacting specifications.**
2. **Contains 2 per cent phosphorus in a microscopic state of subdivision.**
3. **This product is very effective against rats and the American and Oriental species of roaches.**
4. **Senco Brand Phosphorus Paste is sold only in *bulk,* to the *Pest Control Industry,* and to *Manufacturers* of *Insecticides.* It can be packaged in cans or tubes, and sold as YOUR BRAND of rat and roach paste. It does not deteriorate with age and keeps in any climate.**

Quotations on request.
We also manufacture
***SENCO POISON GRAINS**

These grains are used to kill mice. They are not effective against rats.

Sennewald Drug Company, Inc.

EST. 1855

2723 Chouteau Avenue — St. Louis, Missouri

*Reg. U. S. Pat. Office.

PHOSPHORUS PASTE--PHOSPHORUS PASTE--PHOSPHORUS PASTE--PHOSPHORUS PASTE

NOW, More Than Ever, is Niagara Quality Important

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Liquid, Flake or Solid

is famous for its purity—indicated by its remarkably white and uniform color. Liquid shipped in tank cars of 8,000 and 10,000 gallons.

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is the product of pioneer research and manufacture. Quality and good service are assured by our long experience in producing and handling this product.

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Unadulterated Paradichlorobenzene

is distinguished for the fine, white uniformity of its crystals. It is available in any size or type of container you prefer . . . and is produced to meet the most exacting demands.

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Calcined, Hydrated and Liquid 47%

is the first to be made in this country. Niagara has always set the standard for American manufacture of this product. Specify Niagara for quality and uniformitv.

EBC Niagara Alkali Company

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CAUSTIC POTASH · CAUSTIC SODA
PARA · CARBONATE OF POTASH
Liquid Chlorine

An Essential Part Of America's Great Chemical Enterprise

PINE TAR (Contd.)

Hercules Powder Co., Wilmington, Del.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Newport Industries. Inc., 230 Park Ave., N. Y.
Southern Pine Chem. Co., Box 389, Jacksonville
Taylor, Lowenstein & Co., Mobile, Ala.

PIPE COILS

Alloy Prods. Corp., 221 Madison St., Waukesha, Wis.
Brighton Copper Works, 2163 Western Ave., Cincinnati
Harrisburg Steel Corp., Harrisburg, Pa.
Hartford Tube Products Co., Hartford, Conn.
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259 46th St., Brooklyn
National Pipe Bending Co., New Haven, Conn.
Philadelphia Pipe Bending Co., 4100 N. 5th St., Phila.
Pittsburgh Pipe Coil & Bending Co., Etna, Pa.
Rempe Co., 340 N. Sacramento Blvd., Chicago
Whitlock Coil Pipe Co., Hartford, Conn.

PLANT SPRAYS (see Agricultural Insecticides)

PLATES, STEEL, CORROSION-RESISTANT (see STEEL, CORROSION-RESISANT)

PLODDERS (see SOAP MACHINERY)

POISONED SEEDS

Ampion Corp., 4-88—47th Ave., L. I. City, N. Y.
Exterminating Materials Co., 555 W. 22nd St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore, Md.
Hysan Products Co., 58 E. Cullerton St., Chicago
Sennewald Drug Co., 2723 Chouteau Ave., St. Louis
Soilicide Laboratories, Montclair, N. J.
W. R. Sweeney, Salisbury, Mo.
York Chemical Co., 424 W. 18th St., N. Y.

POLISH BASES (see PETROLEUM BASES)

POLISHES

Algoma Mfg. Co., Green Bay, Wis.
Ampion Corp., 4-88—47th Ave., L. I. City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Armiger Chem. Co., 2155 W. Hubbard St., Chicago
Banner Chemical Prod. Corp., 329 Mulberry St., Newark N. J.
Baum's Castorine Co., 200 Mathew St., Rome, N. Y.
Buckingham Wax Corp., Borden Ave. and Van Dam St., L. I. City, N. Y.
Candy & Co., 2515 W. 35th St., Chicago
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., L. I. City, N. Y.
Continental Car-Na-Var Corp., Brazil, Ind.
Creco Co., Creco Bldg., L. I. City, N. Y.
Davis Young Soap Co., Dayton, O.
Delta Chemical Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
Elkay Products Corp., 323 W. 16th St., N. Y.
Empire Chem. Prods. Co., 12 Longworth Ave., Newark, N. J.
Federal Varnish Co., 333 S. Peoria St., Chicago
Fox Lake Wax Co., Fox Lake, Ill.
Franklin Research Co., 5134 Lancaster Ave. Philadelphia
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 Susquehanna Ave., Philadelphia
Haag Laboratories, 6101 S. May St., Chicago
Harley Soap Co., Pierce & Orthodox Sts., Philadelphia
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hull Co., 305 Washington St., Brooklyn
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Products Co., 58 E. Cullerton St., Chicago
International Metal Polish Co., Indianapolis
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
J. S. Lawston Co., 8 Henshaw St., N. Y.
Lewis Soap & Chem. Co., Oakland, Calif.
M & H Laboratories, 2703-5 Archer Ave., Chicago
Masury-Young Co., 76 Roland St., Boston
National Oil Products Co., Harrison, N. J.
North Coast Soap & Chem. Wks., Seattle, Wash.
National Sanitary Prods. Co., 217 N. 2nd St., St. Louis
Palmer Prods., Inc., Waukesha, Wis.
Perrow Chemical Co., Hunt, Va.
Pioneer Mfg. Co., 3053 E. 87th St., Cleveland
Puritan Chem. Co., 209 Peters St., S. W., Atlanta
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Scranton Chem. Co., Scranton, Pa.
Selig Co., 336 Marietta St., Atlanta, Ga.
Shell Oil Co., 50 W. 50th St., N. Y.
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
S. S. Stafford, Inc., 603 Washington St., N. Y.
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Standard Oil Co. (Ohio), Midland Bldg., Cleveland
H. F. Staples Co., Medford, Mass.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Transmotive Labs., 2550 S. Mich. Ave., Chicago
Trojan Products & Mfg. Co., 3130 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Twin City Shellac Co., 340 Flushing Ave., Bklyn.
Twi-Laq Chemical Co., 25 No. Portland Ave., Brooklyn
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Universal Chem. Corp., 35 E. Market St., Akron, O.
Victory Chem. Co., 148 Fairmont Ave., Phila.
T. F. Washburn Co., 2244 Elston Ave., Chicago
Wilco Co., 6800 McKinley Ave., Los Angeles
Windsor Wax Co., 611 Newark St., Hoboken, N. J.

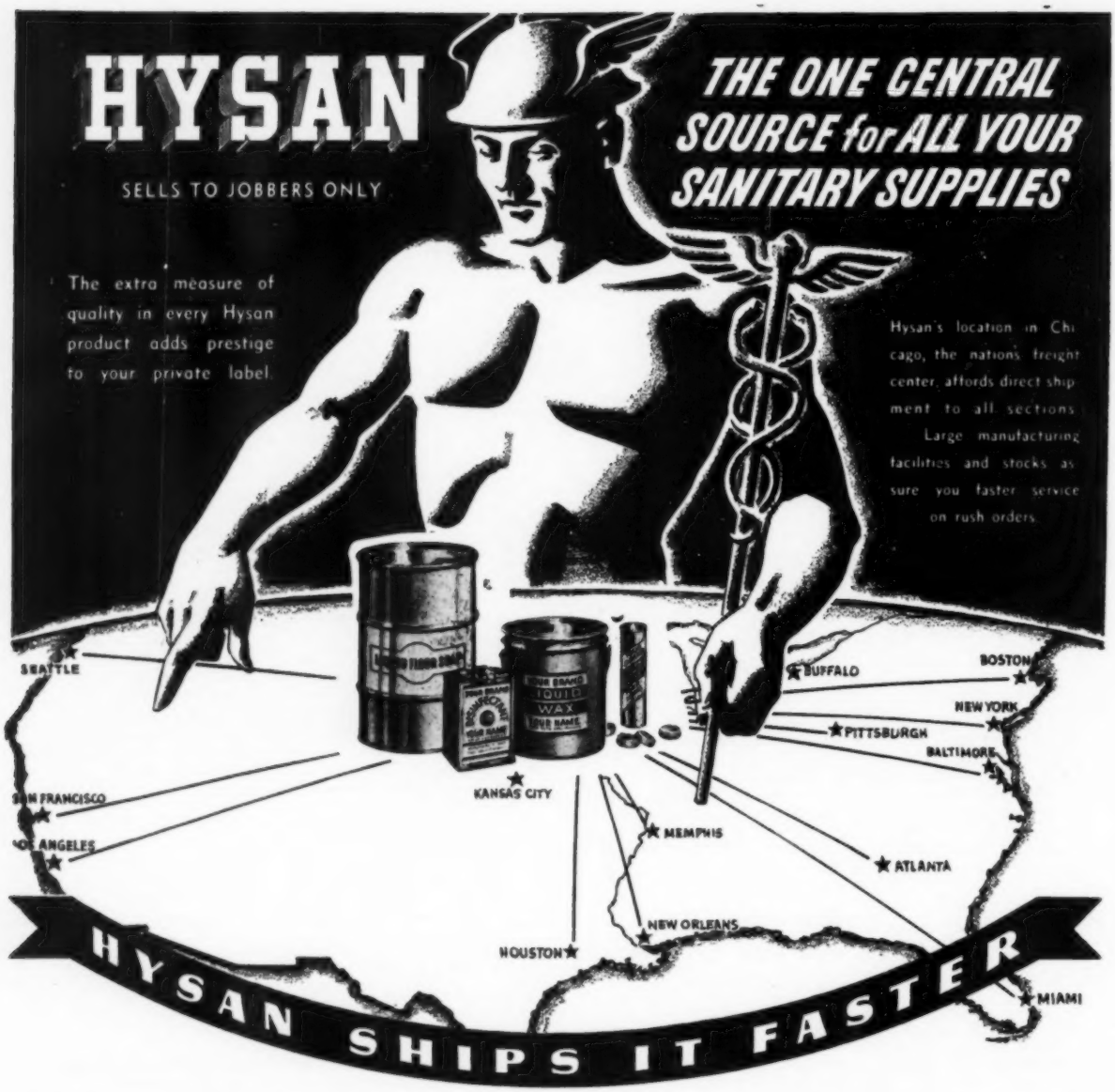
POTASH CAUSTIC

(see also Dealers)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Diamond Alkali Co., 535 Smithfield St., Pittsburgh
E. I. du Pont de Nemours & Co., Wilmington
Innis, Speiden & Co., 117 Liberty St., N. Y.
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Philipp Bros., 70 Pine St., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Weich, Holme & Clark Co., 563 Greenwich St., N. Y.
Westvaco Chlorine Prods. Co., 405 Lexington Ave., N. Y.

POTASH SOAPS

American Soap & Washoline Co., Cohoes, N. Y.
Ampion Corp., 4-88—7th Ave., L. I. City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour Soap Wks., 1355 W. 31st St., Chicago
Banner Chemical Prod. Corp., 329 Mulberry St., Newark, N. J.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Chemical Mfg. & Distrib. Co., Easton, Pa.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., L. I. City, N. Y.
James Counts Soap Co., 2nd & Washington Aves., St. Louis, Mo.



ORDER YOUR WAXES, DEODORANTS, CLEANERS, ETC. FROM HYSAN AND ENJOY THESE REAL ADVANTAGES

★ SUPREME QUALITY

Every item featured in Hysan's catalog is made from the choicest ingredients. Each product has been designed to enhance your prestige, assure your quality leadership.

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When you buy all your supplies from Hysan, you save on freight, bookkeeping, inventory. You purchase many premium quality waxes, cleaners, etc. at ordinary prices. These savings add up.

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Scores of standard Hysan products are engineered to meet users requirements more successfully than competitive products. This is reflected in your increased volume of sales per customer.

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Our field men find out what items your trade wants. Then our chemists proceed to make them. It is a fact that Hysan gives its jobbers many more new profit makers to sell each year.

★ DE LUXE PACKAGES

The Hysan line is packaged to sell. It offers you many more deluxe containers. Private labels are more attractive. Hysan products have the eye appeal essential to the sale of quality goods.

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Every new merchandising plan . . . all Hysan dealer postals, folders, wall cards, technical bulletins, etc. are available to every Hysan jobber for successful sales promotion.

HERE IS THE PROOF

Hysan jobbers are today the fastest growing sanitary supply jobbers in the U.S.A. . . . Write for new Hysan catalog.

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POTASH SOAPS (Contd.)

Creco Co., Creco Bldg., L. I. City, N. Y.
Cudahy Packing Co., 221 N. La Salle St., Chicago
Davies Young Soap Co., Dayton, Ohio
Eagle Soap Corp., Huntington, Ind.
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
A. C. Fergusson Co., Drexel Bldg., Phila.
Fuld Bros., 702 S. Wolfe St., Baltimore
Genseke Bros., W. 48th Pl. & Whipple St., Chicago, Ill.
James Good, Inc., 2116 E. Susquehanna Ave., Philadelphia
Haag Laboratories, Inc., 6101 S. May St., Chicago
Harley Soap Co., Pierce & Orthodox Sts., Philadelphia
Higley Chemical Co., Dubuque. Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Holbrook Mfg. Co., Cole & 18th St., Jersey City
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, Ohio
Hysan Products Co., 58 E. Cullerton St., Chicago
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Cal.
Kranich Soap Co., 54 Richards St., Brooklyn
Laurel Soap Mfg. Co., Tioga & Almond Sts., Philadelphia
Long Island Soap Co., Meeker Ave. & Bridgewater St., Brooklyn
Los Angeles Soap Co., Los Angeles, Calif.
Masury-Young Co., 76 Roland St., Boston
Moore Bros. Co., 67 Vestry St., New York
National Oil Products Co., Harrison, N. J.
National Soap Co., 357 South 25th St., Tacoma, Wash.
North Coast Chem. & Soap Wks., Seattle, Wash.
Palmer Prods., Inc., Waukesha, Wis.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati, O.
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Theo. B. Robertson Prods. Co., 700 W. Divisin St., Chicago
Rochester Germicide Co., Rochester, N. Y.
Royal Soap & Chem. Co., 511 S. Central Ave., Los Angeles
Rubon Woodfinishing & Prods. Co., 500 W. 7th St., Kansas City, Mo.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Schaeffer Bros. & Powell Mfg. Co., 102 Barton St., St. Louis, Mo.
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
Standard Oil Co. (Ohio), Midland Bldg., Cleveland
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Thompson-Hayward Chemical Co., Kansas City, Mo.
Tremco Mfg. Co., 393 East 131st St., Cleveland
Trojan Products & Mfg. Co., 3130 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Chas. W. Young & Co., 1247 N. 26th St., Philadelphia

POTASSIUM CARBONATE

American Cyanamid & Chemicals Corp., 30 Rockefeller Plaza, N. Y.
Diamond Alkali Co., 535 Smithfield St., Pittsburgh
E. I. du Pont de Nemours & Co., Wilmington, Del.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Harshaw Chem. Co., Cleveland
Niagara Alkali Co., 60 E. 42nd St., N. Y.
E. M. Sergeant Pulp & Chem. Co., 350 5th Ave., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

POTASSIUM PERSULFATE

American Cyanamid & Chemicals Corp., 30 Rockefeller Plaza, N. Y.
Buffalo Elec. Chem. Co., River Rd., Buffalo
E. I. du Pont de Nemours & Co., Wilmington, Del.
E. M. Sergeant Pulp & Chemical Co., 350 5th Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

POTASSIUM SILICATE

E. I. du Pont de Nemours & Co., Wilmington, Del.
Philadelphia Quartz Co., 125 S. 3rd St., Philadelphia

POWDER GUNS (see BELLOWS)

POWDERED SOAP (see SOAP, POWDERED) Do not confuse with SOAP POWDERS

PREMIUMS

Anchor Hocking Glass Corp., Lancaster, O. (glassware)
Goody Mfg. Co., 15 E. 22nd St., N. Y. (novelties)
Hazel-Atlas Co., Wheeling, W. Va. (glassware)
Holgate Co., Kane, Pa. (woodenware toys)
Keystone Processed Prods. Co., 683 Broadway, N. Y.

PRESSES (Automatic Soap)

Brill Equipment Corp., 183 Varick St. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
R. A. Jones & Co., Cincinnati, O.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Stein Equipment Corp., 426 Broome St., N. Y. (Used)

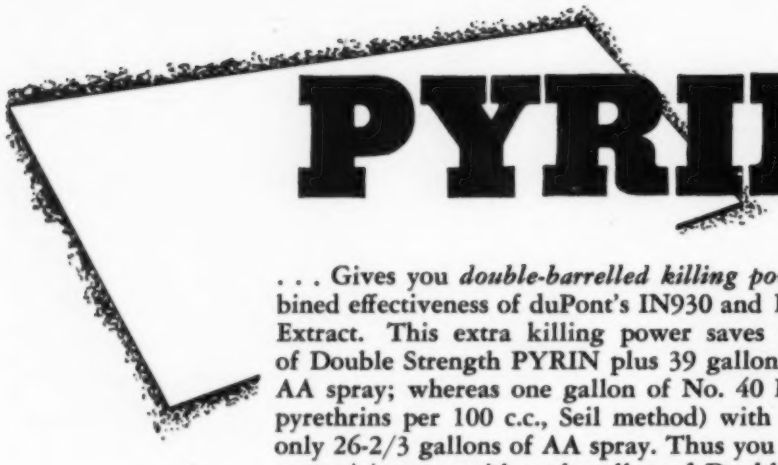
PRESSES (Foot and Hand Lever for Soap and Para Cakes)

Brill Equipment Corp., 183 Varick St. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259 46th St., Brooklyn
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
F. J. Stokes Mach. Co., Philadelphia, Pa.

PRIVATE FORMULAS (see under individual products)

PULVERIZERS

Abbe Engineering Co., 50 Church St., N. Y.
American Pulverizer Co., 18th & Austin Sts., St. Louis
C. O. Bartlett & Snow Co., 6200 Harvard Ave., Cleveland
Brill Equipment Corp., 133 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Gruendler Patent Crusher & Pulverizer Co., 900 N. First St., St. Louis
B. F. Gump Co., 412 S. Clinton St., Chicago
Houchin Machy. Co., Hawthorne, N. J.
Huber Machine Co., 259 46th St., Brooklyn
Kent Machine Works, 30 Gold St., Brooklyn
Lancaster Iron Works, Lancaster, Pa.
J. M. Lehmann Co., 248 Broadway, N. Y.
Olsen & Tilgner Mfg. Co., 2276 Elston Ave., Chicago
H. K. Porter Co., 49th & Hancock Sts., Pittsburgh
Prater Pulverizer Co., 1829 S. 55th Ave., Chicago



. . . Gives you *double-barrelled killing power* because it contains the combined effectiveness of duPont's IN930 and POWCO Brand Basic Pyrethrum Extract. This extra killing power saves you money because one gallon of Double Strength PYRIN plus 39 gallons of diluent makes 40 gallons of AA spray; whereas one gallon of No. 40 Pyrethrum Concentrate (4 grams pyrethrins per 100 c.c., Seil method) with 25-2/3 gallons of diluent makes only 26-2/3 gallons of AA spray. Thus you get a bonus of 13-1/3 gallons of extra AA spray with each gallon of Double Strength PYRIN. Furthermore, a gallon of PYRIN is also lower in cost than a gallon of Straight Pyrethrum Extract . . . an *added extra* saving for you.

BASIC PYRETHRUM EXTRACTS—For manufacturers who have not already switched to PYRIN, Powco Brand Basic Pyrethrum Extract is recommended because it is made by selective cold extraction.

STIMTOX—Pest Control Operators and compounders of roach powders should investigate Stimtox "A," the low-cost, fortified pyrethrum powder.

PYRETHRUM POWDERS—Finer milling to give you more particles per pound . . . greater spread with higher kill.

ROTENONE PRODUCTS—Derris, Cube and Timbo powders of the same finer grinding.

PYRISCENTS—The first insecticide perfumes specifically compounded and thoroughly tested for chemical compatibility with the active principles of Pyrethrum and Pyrin. PYRISCENTS (available in most any odor) are *completely* oil soluble; *will not react chemically to reduce killing power;* and maintain their full odor value long after incompatible perfumes have gone "sour."

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Sturtevant Mill Co., Harrison Sq., Boston
Williams Patent Crusher & Pulverizer Co., St. Louis

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Chas. B. Chrystal Co., 16 Hudson St., N. Y.
Pumice Corp. of America, Grants, N. M.
Wm. P. Rogers, 44 Woodman St., Lynn, Mass.
Whittaker, Clark & Daniels, 260 W. Bway., N. Y.

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Aldrich Pump Co., 1 Pine St., Allentown, Pa.
Alsop Engineering Corp., 100 High St., Milldale, Conn.
American Steam Pump Co., Battle Creek, Mich.
Beach-Russ Co., 50 Church St., N. Y.
Blackmer Pump Co., Grand Rapids, Mich.
S. F. Bowser & Co., Ft. Wayne, Ind.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
M. T. Davidson Co., 154 Nassau St., N. Y.
Eastern Engineering Co., 45 Fox St., New Haven, Conn.
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Foster Pumps, Inc., 51 Washington St., Brooklyn, N. Y.
Goulds Pumps, Inc., Seneca Falls N. Y.
Joshua Hendy Iron Wks., Pomona, Calif.
Houchin Machinery Co., Hawthorne, N. J.
Ingersoll-Rand Co., 11 Broadway, N. Y.
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
Lobee Pump & Machine Co., Buffalo, N. Y.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
P. H. & F. M. Roots Co., Connersville, Ind.
Scientific Filter Co., 12 Franklin Square, N. Y.
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Stein Equipment Corp., 426 Broome St., N. Y. (Used)
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Derris, Inc., 79 Wall St., N. Y.
Dodge & Olcott Co., 180 Varick St., N. Y.
Hammond Paint & Chemical Co., Beacon, N. Y.
J. L. Hopkins & Co., 220 Broadway, N. Y.
McCormick & Co., Baltimore, Md.
McLaughlin, Gormley King Co., 1715 Fifth St., S. E., Minneapolis, Minn.
S. B. Penick & Co., 50 Church St., N. Y.
John Powell & Co., 114 E. 32nd St., N. Y.
R. J. Prentiss & Co., 80 John St., N. Y.
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John Powell & Co., 114 E. 32nd St., N. Y.
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Pacific Vegetable Oil Corp., 62 Townsend St., San Francisco
J. H. Redding, Inc., 17 Battery Pl., N. Y.
E. M. Sergeant Pulp & Chemical Co., Empire State Bldg., N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Smith-Weihman Co., 15 Moore St., N. Y.
A. E. Starkie, 5461 W. Division St., Chicago
Arthur C. Trask Co., 4103 S. La Salle St., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

RAT EXTERMINATING PRODUCTS

American Fluoride Corp., 151 W. 19th St., N. Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Calif.
Associated Chemists, Inc., 1906 N. Halsted Ave., Chicago
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Eagle Soap Corp., Huntington, Ind.
Exterminating Materials Co., 555 W. 22nd St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Goulard & Olena, Inc., 140 Liberty St., N. Y.
Foote Mineral Co., 1609 Summer St., Philadelphia
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Hysan Products Co., 58 E. Cullerton St., Chicago
Innis, Speiden & Co., 117 Liberty St., N. Y.
Lethelin Products Co., Mt. Vernon, N. Y.
Lewis Soap & Chem. Co., 2210 San Pablo Ave., Oakland, Calif.
Maywood Pest Exterminators, Maywood, Ill.
John Opitz, Inc., 50-14 39th St., Long Island City, N. Y.
Pfaltz & Bauer, Inc., 350 Fifth Ave., N. Y.
Ratin Laboratories, Inc., 112 Broad St., N. Y.
Sennewald Drug Co., 2723 Chouteau Ave., St. Louis
Shores Co., Cedar Rapids, Iowa
Soilicide Laboratories, Upper Montclair, N. J.
Sur-Rid Prods. Co., 455 Paul Brown Bldg., St. Louis
Trojan Prods. & Mfg. Co., 3130 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Victory Chem. Co., 148 Fairmount Ave., Philadelphia
York Chemical Co., 424 W. 18th St., N. Y.

RAT POISONS (see SQUILLS, THALLIUM SULFATE, etc.)

RED OIL (Oleic Acid)

(see also Brokers and Dealers)

American British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
American Cyanamid & Chemicals Corp., 30 Rockefeller Plaza, N. Y.
Armour & Co., 1355 W. 31st St., Chicago
Celina Stearic Acid Co., Celina, Ohio
Century Stearic Acid Candle Works, 41 E. 42nd St., N. Y.
Darling & Co., 4201 S. Ashland Ave., Chicago
E. F. Drew & Co., Wecoline Div., Boonton, N. J.

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Redistilled Corn Oil F.A.	26-28	100	100-110	2 NPA max.	.....
Distilled Cotton Oil F.A.	32-34	98	90-100	3½ NPA max.	.....
Redistilled Cotton Oil F.A.	34-36	100	90-100	2 NPA max.	.....
Distilled Coconut F.A.	18-22	128	9-15	2 NPA max.	.....
Distilled Veg. F.A. (VRO)	20-24	110	45-55	3 NPA max.	.....
Distilled Animal F.A.	38-42	102	50-60	2 NPA max.	.....
Distilled Roleic F.A.	32-36	100	44-50	3½ NPA max.	.....

The Purest Form of

STEARIC ACID

Specifications

	Titre	Iodine	F.F.A.	Color. Reading Yellow	Red
Single Pressed Stearic Acid Bead form Stearic Acid Cake form	52.2 to 53.0	10 to 15	103 to 104	10 max.	1.5 max.
Hi Test Single Pressed S. A. Cake or Beads	53.0 53.4	9 max.	103 104	6 max.	1.0 max.
Standard Double Pressed Cake or Beads	53.4 53.9	7 to 9	103 104	4 max.	0.8 to 1.0
Super Double Pressed Cake or Beads	53.9 54.3	5 to 7	103 104	3 max.	0.8 max.
Special Double Pressed Cake for Candle Mfg.	53.9 54.3	5 7	103 105	3 max.	0.8 max.
				Ash 0.004 max.	
Triple Pressed (Regular) Cake or Beads	54.5 53.8	4 max.	104 105	2 max.	0.5 max.
Triple Pressed (Super) *Cake or Beads (Crystal brand)	54.9 55.3	2 max.	104 105	1 max.	0.2 max.

*Large crystals.
Special quality stearic acid produced for buffing trade.

RED OIL

(Saponified and Distilled)

Specifications

	Titre	Iodine	F.F.A.	Color	Unsap.
Distilled R. O. (Reg. Grade)	10-12	92 max.	95-96	3½-4 NPA	3½-4
Distilled R. (Extra Quality)	8-10/10/12	90	97-98	2½-3½ NPA	3%
White Oleine (Redist. R/O)	10-12	90	99-100	1½ max. NPA	2%
Sap. Red Oil (Reg. Grade)	10-12	88-90	92-95	5-7 max. NPA	3% max.
Sap. Red Oil (Hi Titre)	34-38	.....	100-102	7 or darker	.....

(Also Dist. as above except color lighter)
Other grades of both Dist. & Sap. R/O blended to customers specifications or made on order to match samples as submitted.

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W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Harkness & Cowing, Ivorydale, Cincinnati
Procter & Gamble Co., Cincinnati
E. M. Sergeant Pulp & Chem. Co., 350 5th Ave., N. Y.
Theobald Industries, Kearny, N. J.
Arthur C. Trask Co., 4108 S. La Salle St., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
M. Werk Co., St. Bernard, Cincinnati
Wilson-Martin Co., Snyder Ave. & Swanson St., Philadelphia

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Buffalo Foundry & Machine Co., Buffalo, N. Y.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
William Garrigue & Co., 9 S. Clinton St., Chicago
Alan Porter Lee, Inc., 136 Liberty St., N. Y.
Lancaster Iron Works, 564 S. Prince St., Lancaster, Pa.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Ernest Scott & Co., Fall River, Mass.
Struthers-Wells Co., Warren, Pa.
Walter E. Simmons Co., Boston
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Struthers-Wells Co., Warren, Pa.
Swenson Evaporator Co., Harvey, Ill.
Wurster & Sanger, Inc., 5201 S. Kenwood Ave., Chicago

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York Ice Machine Co., York, Pa.

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Patterson Foundry & Mach. Co., East Liverpool, O.
Struthers-Wells Co., Warren, Pa.
Wurster & Sanger, Inc., 5201 Kenwood Ave., Chicago

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Bakelite Corp., 240 Park Ave., N. Y.
General Electric Co., Bridgeport, Conn.
Durez Plastics, Inc., North Tonawanda, N. Y.
Paramet Chem. Corp., 44th Ave. & 10th St., L. I. City
Reichhold Chemicals, Inc., Detroit
Resinous Prods. & Chem. Corp., 222 W. Washington Sq., Philadelphia
Stroock & Wittenberg Corp., Lincoln Bldg., N. Y.

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Georgia Rosin Prods. Co., Brunswick, Ga.
Glidden Co., Naval Stores Div., P. O. Box 380, Jacksonville, Fla.
Hercules Powder Co., Wilmington, Del. (wood)
Industrial Chem. Sales Div., West Va., Pulp & Paper Co., 230 Park Ave., N. Y.
Newport Industries, Inc., 230 Park Ave., N. Y.
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Chemical Mfg. & Distrib. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., L. I. City, N. Y.
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Davies-Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., Kensington, Philadelphia, Pa.
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Hockwald Chem. Co., 135 Mississippi St., San Francisco
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Trojan Prods. & Mfg. Co., 3130 S. Wabash Ave., Chicago
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Universal Chem Corp., 35 E. Market St., Akron, O.
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Peck's Prods. Co., 5240 N. 2nd St., St. Louis
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Diamond Alkali Co., 535 Smithfield St., Pittsburgh
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General Chemical Co., 40 Rector St., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Alkali Works, 60 E. 42nd St., N. Y.
Mechling Bros. Chemical Co., Camden, N. J.
Pittsburgh Plate Glass Co., Columbia Chem. Div., Grant Bldg., Pittsburgh
E. M. Sergeant Pulp & Chemical Co., Empire State Bldg., N. Y.
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Jefferson Salt & Mining Co., Louisville, Ky.
LeRoy Salt Co., LeRoy, N. Y.
Myles Salt Co., 1007 Camp St., New Orleans, La.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
Pomeroy Salt Co., Pomeroy, Ohio
Remington Salt Co., Ithaca, N. Y.
Saginaw Salt Prods. Co., Saginaw, Mich.
Solvay Sales Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

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Armour Soap Wks., 1355 W. 31st St., Chicago
Buck-Jack Co., 3056 Federal St., Baltimore
J. Eavenson & Sons, Camden, N. J.
Hewitt Soap Co., Dayton, O.
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Los Angeles Soap Co., Los Angeles
National Oil Products Co., Harrison, N. J.
Newell-Gutradt Co., San Francisco
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati, O.
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Interstate Color Co., 5 Beekman St., N. Y.
Geo. Lueders & Co., 427 Washington St., N. Y.
Merck & Co., Rahway, N. J.
S. B. Penick & Co., 50 Church St., N. Y.
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Armour & Co., 1355 W. 31st St., Chicago
Baum's Castorine Co., 200 Mathew St., Rome, N. Y.
Buck-Jack Co., 3056 Federal St., Baltimore
Chemical Mfg. & Distrib. Co., Easton, Pa.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Cowles Detergent Co., 7016 Euclid Ave., Cleveland
Cudahy Packing Co., 221 N. La Salle St., Chicago
Du Bois Soap Co., Cincinnati, O.
Fuld Bros., 702 S. Wolfe St., Baltimore
Higley Chem. Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hysan Prods., 58 E. Cullerton St., Chicago
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Cal.
National Milling & Chem. Co., Manayunk, Philadelphia
Pacific Chem. Co., 1412 N. Main St., Los Angeles
Peck's Prods. Co., 5224 N. 2nd St., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Philadelphia
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Cincinnati
Puritan Chem. Co., 209 Peters St., S.W., Atlanta
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Solvay Sales Corp., 40 Rector St., N. Y.
S. & S. Soap Co., 324 Barretto St., Bronx, N. Y.
John T. Stanley Co., 642 W. 30th St., N. Y.
Stevens Soap Corp., 200 Sullivan St., Brooklyn
Swift & Co., Chicago
Trojan Products & Mfg. Co., 3130 S. Wabash Ave., Chicago
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago
Chas. W. Young & Co., 1247 N. 26th St., Philadelphia

SCOURING SOAPS (Bars)

American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Works, 1355 W. 31st St., Chicago
Baum's Castorine Co., Rome, N. Y.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Cudahy Packing Co., 221 N. La Salle St., Chicago
James Good, Inc., 2116 E. Susquehanna Ave., Philadelphia
Hewitt Soap Co., Dayton, O.
Los Angeles Soap Co., Los Angeles
National Soap Co., P. O. Box 1631, Tacoma, Wash.
Peck's Products Co., St. Louis
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Cincinnati, O.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Chicago
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago
Chas. W. Young & Co, 1247 N 26th St., Phila.

SCREENS (Screening Equipment)

C. O. Bartlett & Snow Co., 6200 Harvard Ave., Cleveland, O.
B. F. Gump Co., 412 S. Clinton St., Chicago
J. H. Day Co., Cincinnati
J. M. Lehmann Co., 248 W. Broadway, N. Y.
Ludlow-Sayer Wire Co., St. Louis, Mo.
Orville Simpson Co., 1230 Knowlton St., Cincinnati
Sprout, Waldron & Co., Muncy, Pa.
Stedman's Fdy. & Machine Works, Aurora, Ind.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Sturtevant Mill Co., Boston, Mass.
W. S. Taylor Co., Cleveland, O.
Wickwire Spencer Steel Co., 500—5th Ave., N. Y.

SCRUBBING MACHINES (see FLOOR MACHINES)

Sanitary Supplies

by CLIFTON

The Duodek Soaper

The Tiltype Soap Dispenser

featuring

★ QUALITY
★ PRICE
★ SERVICE

DEODORETTE BLOCKS

PACKING—To meet your requirements, from 55 gal. drums down to 1 gal. jugs, for liquids. Liquid soap base, oil soap, etc., put up in 450-lb. bbls., 250 lb. ½ bbls., 140 lb. kegs, 65 lb. tubs.

EXACTNESS—Every product described will do exactly what it is intended to do efficiently and economically. No bombastic or impossible claims are made and no Clifton representative is knowingly permitted to make such claims.

LIQUID SOAPS and BASES

FOAMWEL LIQUID SOAP
CLIFTON LIQUID SOAP CONCENTRATE
CLIFTON LIQUID SOAP BASE
SEMI-CASTILE LIQUID SOAP
SHAMPOO SOAPS

DISINFECTANTS, ETC.

PINE TREE DISINFECTANT
CRESOLENE DISINFECTANT
HIGH COEFFICIENT DISINFECTANT

VEGETABLE SOAP CLEANSERS

PINE-GLOSS CLEANSER
SHINE-BRITE
METEOR OIL SOAP
DAZZLE SILVER POLISH (Mineral Paste)
GREEN SOAPS

DEODORIZING BLOCKS

DEODORETTES—Popular priced cakes packed in attractive resale containers
SENTINELS—Deodorizing Cakes De Luxe
MOTH CAKES—Pure Paradichlorbenzene

POLISHES, ETC.

RUB-NO LIQUID WAX
PREPARED LIQUID WAX
DAZZLE METAL POLISH
GRADE "A" FURNITURE CREAM
LUSTRA BAR OIL
MOP-IN-VAR

CLIFTON CHEMICAL CO., INC.

246 FRONT STREET NEW YORK, N. Y.

SCRUBBING SOAPS, LIQUID (see FLOOR SCRUB SOAPS)

SEALING MACHINERY (Bags)

B. F. Gump Co., 412 S. Clinton St., Chicago
New Jersey Machine Corp., Hoboken, N. J.
Stokes & Smith Co., 4915 Summerdale Ave., Philadelphia
Weigh Right Automatic Scale Co., Joliet, Ill.

SEALING MACHINERY (Cartons)

Burt Machine Co., 401 E. Oliver St., Baltimore
Consolidated Products Co., 15 Park Row, N. Y. (Used)
J. L. Ferguson Co., Joliet, Ill.
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
Johnson Automatic Sealer Co., Battle Creek, Mich.
R. A. Jones & Co., Cincinnati, O.
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
New Jersey Machine Corp., Hoboken, N. J.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Stokes & Smith Co., 4915 Summerdale Ave., Philadelphia
Triangle Package Machinery Co., 906 Spaulding Ave., Chicago
Weigh Right Automatic Scale Co., Joliet, Ill.

SEEDS, POISONED (see POISONED SEEDS)

SESQUICARBONATE OF SODA (for Bath Salts, etc.), (see SODIUM SESQUICARBONATE)

SHAMPOO BASE and LIQUID (SOAP BASE)

Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour Soap Wks., 1355 W. 31st St., Chicago
Baum's Castorine Co., 200 Mathew St., Rome, N. Y.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Compounding Corp., 262 Huron St., Bklyn, N.Y.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19 37th Ave., L. I. City, N. Y.
Columbia Soap & Chem. Co., Inc., 324 Leavenworth St., San Francisco
James Counts Soap Co., 2nd and Washington Aves., St. Louis
Davies-Young Soap Co., Dayton, O.
Delta Chemical Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
J. Eavenson & Sons, Camden, N. J.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Haag Laboratories, Inc., 6101 S. May St., Chicago
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Cal.
Kranich Soap Co., 54 Richards St., Brooklyn
Lewis Soap & Chem. Co., Oakland, Calif.
Moore Bros. Co., 67 Vestry St., N. Y.
Napthole, Inc., 15 E. 26th St., N. Y.
National Oil Products Co, Harrison, N. J.
Palmer Products, Inc., Waukesha, Wis.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati
Richards Sales Corp., Warren and Morris Sts., Jersey City, N. J.
Theo. B. Robertson Prods. Co., 700 W. Division St. Chicago
Rochester Germicide Co., Rochester, N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Sanitax Brush & Prods. Co., 230 E. Ohio St., Chicago
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
L. Sonneborn Sons, 88 Lexington Ave., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Bklyn., N. Y.
Swift & Co., Chicago
Thompson-Hayward Chem. Co., Kansas City, Mo.
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Universal Chem. Corp., 35 E. Market St., Akron, O.
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Woburn Degreasing Co. of N. J., Harrison, N. J.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago
Chas. W. Young & Co., 1247 N. 26th St., Phila.

SHAMPOOS, POWDER AND CAKE

Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
Armour & Co., 1355 W. 31st St., Chicago
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Davies-Young Soap Co., Dayton, O.
Emulsol Corp., 59 E. Madison St., Chicago
Kranich Soap Co., 60 Richard St., Bklyn.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
National Oil Products Co., Harrison, N. J.
North Coast Chem. & Soap. Wks., Seattle, Wash.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
John Powell & Co., 114 E. 32nd St., N. Y.
Procter & Gamble Co, Cincinnati
Richards Sales Corp., Jersey City, N. J.
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
Superior Soap Corp., 121 Nostrand Ave., Bklyn., N. Y.
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

SHAMPOOS, SOAPLESS

Ampion Corp., 4-88—47th Ave., L. I. City, N. Y.
Davies-Young Soap Co., Dayton, O.
Emulsol Corp., 59 E. Madison St., Chicago
Fuld Bros., 702 S. Wolfe St., Baltimore
General Drug Co., 644 Pacific St., Bklyn.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Lewis Soap & Chem. Co., Oakland, Calif.
Michel Export Co., 95 Broad St., N. Y.
National Oil Products Co., Harrison, N. J.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati
Richards Sales Corp., Warren and Morris Sts., Jersey City, N. J.
Sanitax Brush & Prods. Co., 230 E. Ohio St., Chicago
Sherwood Refining Co., Englewood, N. J.
L. Sonneborn Sons, Inc., 88 Lexington Ave., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Bklyn, N. Y.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago

SHAVING CREAM (Soap and Brushless)

Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Clifton Chemical Co., 247 Front St., N. Y.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Nat'l Oil Products Co., Harrison, N. J.
Procter & Gamble Co., Cincinnati
Richards Sales Corp., Warren and Morris Sts., Jersey City, N. J.
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

SHAVING CREAM BASE

Clifton Chemical Co., 247 Front St., N. Y.
Nat'l Oil Products Co., Harrison, N. J.

Everyone Likes to Watch a Parade

PRODUCTS

Liquid Soap Dispensers
Liquid Soaps & Bases
Oils, Soaps, & Liquids
Disinfectants
Insecticides
Waxes & Polishes
Deodorizing Blocks
Containers
and Allied Products

Watch the better results you will get with AMPION SOAP DISPENSERS. There are models for every need. Beauty and durability are built into every machine. Prices are no higher than ordinary dispensers.

Our complete line of Sanitation Chemical Products are also at your service.

AMPION CORPORATION

4-88 FORTY SEVENTH AVE.
LONG ISLAND CITY, N. Y.

SHAVING CREAM BASE (Contd.)

John Powell & Co., 114 E. 32nd St., N. Y.
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

SHAVING SOAP (Cake, Stick, Powder)

Colgate-Palmolive-Peet Co., Jersey City, N. J.
J. Eavenson & Sons, Del. and Penn Sts., Camden, N. J.
Hewitt Soap Co., Dayton, O.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Los Angeles Soap Co., Los Angeles
Procter & Gamble Co., Cincinnati
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

SHIPPING CASES (see BOXES)

SHEEP DIPS (see CATTLE DIPS)

SHELLAC

Barrett Varnish Co., 1532 S. 50, Cicero, Ill.
Bradshaw Praeger & Co., 3248 W. 47th Place, Chicago
Chas. Comerford Shellac Co., 509 Third Ave., Brooklyn, N. Y.
Gillespie-Rogers-Pyatt Co., 80 John St., N. Y.
Haeuser Shellac Co., 52 Warren St., Brooklyn, N. Y.
George H. Lincks, 155 John St., N. Y.
Mac-Lac Co., Inc., 127 Maiden Lane, N. Y.
Mantrose Corp., 136 41st St., Brooklyn, N. Y.
Twin City Shellac Co., 338 Flushing Ave., Brooklyn
Wm. Zinsser & Co., 516 W. 59th St., N. Y.

SHOE POLISH DAUBERS

Alba Cook Co., Jersey City, N. J.
American Cork Specialty Co., 115 Sutton St., Bklyn, N.Y.
Applicator Brush Co., 87 Frankfort St., N. Y.
Applicator Co., 1512 Atlantic Ave., Bklyn., N. Y.
Armstrong Cork Co., Lancaster, Pa.

SIFTER TOP CANS (see CANS, Sifter Top)

SIFTING EQUIPMENT (see SCREENS)

SILICA

American Colloid Co., 363 W. Superior St., Chicago
California Industrial Minerals Co., Friant, Calif.
Chas. B. Chrystal Co., 16 Hudson St., N. Y.
Dicalite Co., 120 Wall St., N. Y.
E. I. du Pont de Nemours Co., Wilmington, Del.
Goris & Arnstein, 1207 W. 37th, Chicago
K. F. Griffiths & Co., 110 E. 42nd St., N. Y.
Hammill & Gillespie, 225 Broadway, N. Y.
Harshaw Chem. Co., Cleveland
Illinois Silica Co., Cairo, Ill.
Innis, Speiden & Co., 117 Liberty St., N. Y.
International Silica Co., Cairo, Ill.
N. J. Pulverizing Co., Lewistown, Pa.
Jas. H. Rhodes & Co., 153 W. Austin Ave., Chicago
L. A. Salomon & Bro., 216 Pearl St., N. Y
Silica Prods Co., 700 Baltimore Ave., Kansas City, Mo.
A. E. Starkie, 5461 W. Division St., Chicago
Tamms Silica Co., 228 N. La Salle St., Chicago
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.

SILICATE OF SODA (see SODIUM SILICATE)

SLABBERS (see SOAP MACHINERY)

SOAP BARK and EXTRACT (see SAPONIN)

SOAP, CASTILE (see CASTILE SOAP)

SOAP, CHIP (see CHIP SOAP)

SOAP, FLAKE (see CHIP SOAP)

SOAP, LINSEED OIL (see POTASH SOAPS)

SOAP, POWDERED (White neutral powdered soap, powdered castile soap, etc., 95-99 per cent anhydrous soap. Do not confuse with Soap Powders.)

Armour Soap Wks., 1355 W. 31st St., Chicago
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Conti Products Corp., 155 Varick St., N. Y.
J. Eavenson & Sons, Camden, N. J.
J. L. Hopkins & Co., 220 Broadway, N. Y.
Insto Co., 110 Center St., Los Angeles
Kranich Soap Co., 60 Richards St., Brooklyn, N. Y.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
S. B. Penick & Co., 50 Church St., N. Y.
John Powell & Co, 114 E. 32nd St., N. Y.
R J. Prentiss & Co., 80 John St., N. Y.
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Allen B. Wrisley Co., 6801 W. 56th St., Chicago

SOAP, WHALE OIL (see WHALE OIL SOAP)

SOAP COLORS (See COLORS)

SOAP DIES

Anthony J. Fries & Son Co., 717 Sycamore St., Cincinnati
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259 46th St., Brooklyn, N. Y.
Jas. H. Matthews & Co., 3942 Forbes St., Pittsburgh
Mooney & Bueter, 564 W. Randolph St., Chicago
I. Schwartz Engraving & Die Works, 38 W. 21st St., N. Y.

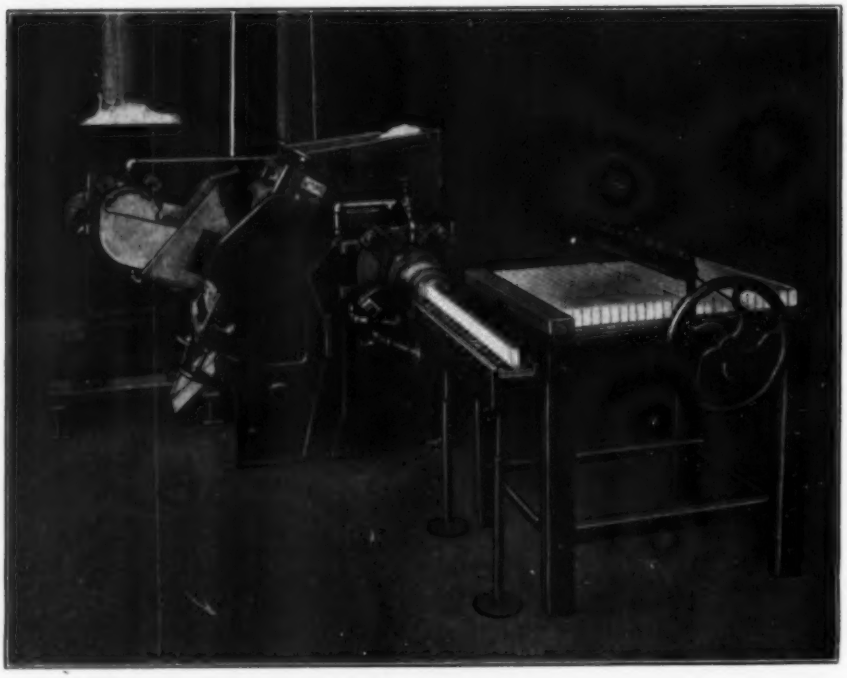
SOAP DRYERS (see DRYERS)

SOAP FRAMES (see FRAMES)

SOAP KETTLES (see KETTLES)

SOAP DISPENSERS (Liquid)

Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
American Dispenser Co., 215 Fourth Ave., N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago



No. 101 UNIT—consists of

1—8″ Plodder

1—3 Roll Mill

1—10″ Double Head Plodder

Roller Board

Cutting Table

1-20 H.P. Motor

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KEEP YOUR HOUCHIN SOAP MACHINES PRODUCING FOR VICTORY

While new soap machines are not now available for delivery, we concentrate on helping customers get the most out of their present machines. When new machines can again be delivered, you will find Houchin Soap Machines, as always, the most efficient you can buy.

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Unit No. 2
Capacity 500 lbs. per hour

Complete Unit No. 3
Capacity 1,000 lbs. per hour

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Let us plan for your future needs now.

HOUCHIN MACHINERY CO., Inc.

HAWTHORNE, N. J., U. S. A.

SOAP DISPENSERS (Liquid) (Contd.)

Bobrick Mfg. Corp., 2619 Santa Fe Ave., Los Angeles
Clifton Chemical Co., 247 Front St., N. Y.
Davies-Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Garnet Chem. Corp., 911 N. Lumber St., Allentown, Pa.
R. M. Hollingshead Corp., Camden, N. J.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago
Moore Bros. Co., 67 Vestry St., N. Y.
Palmer Products, Inc., Waukesha, Wis.
Rochester Germicide Co., Rochester, N. Y.
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago

SOAP DISPENSERS (Powder)

Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
American Dispenser Co., 215 Fourth Ave., N. Y.
Bobrick Mfg. Corp., 2619 Santa Fe Ave., Los Angeles
Clifton Chemical Co., 247 Front St., N. Y.
Federal Tool Corp., 412 N. Leavitt St., Chicago
Fuld Bros., 702 S. Wolfe St., Baltimore
R. M. Hollingshead Corp., Camden, N. J.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago
Moore Bros. Co., 67 Vestry St., N. Y.
Packwood Mfg. Co., St. Louis
Palmer Products, Inc., Waukesha, Wis.
Presto Mfg. Co., 770 Cromwell Ave., St. Paul, Minn.
Rochester Germicide Co., Rochester, N. Y.
Sugar Beet Prods. Co., Saginaw, Mich.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Vasco Products Co., Elmira, N. Y.

SOAP DISPENSING SYSTEMS (Multi-unit with Tanks)

Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
American Dispenser Co., 215 Fourth Ave., N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Bobrick Mfg. Corp., 2619 Santa Fe Ave., Los Angeles
Clifton Chemical Co., 247 Front St., N. Y.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
R. M. Hollingshead Corp., Camden, N. J.
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago
Moore Bros. Co., 67 Vestry St., N. Y.
Palmer Products, Inc., Waukesha, Wis.
Rochester Germicide Co., Rochester, N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
West Disinfecting Co., Long Island City, N. Y.

SOAP MACHINERY

Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
J. M. Lehmann Co., 248 West Broadway, N. Y.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
H. K. Porter Co., 49th and Harrison Sts., Pittsburgh

SOAP PAPER (Soap Sheets)

Charles F. Hubbs & Co., 383 Lafayette St., N. Y.
Moore Bros. Co., 67 Vestry St., N. Y.
Rosefelt Sale Builders, 740 N. Plankinton Ave., Milwaukee, Wisc.
Velso Products Co., Ottumwa, Iowa

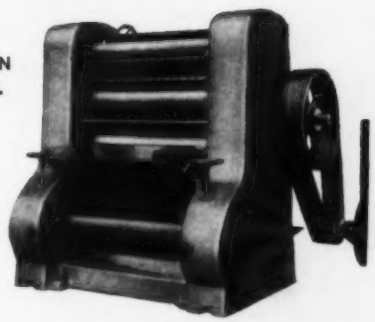
That Soap Machine You Would Like To Have Has Gone To War

IT isn't in the shape of a soap mill or plodder. Its steel has been fashioned into a machine of much more vital importance to winning the war—speedily.

In this work of supplying the armed forces with some of the machines they need to do their job well, we are gaining valuable knowledge and experience which will enable us one day to produce even better mills and plodders than ever before.

A LEHMANN SOAP PLODDER

A LEHMANN SOAP MILL



- No finer machines were made before the war.
- No finer machines will be made after the war.

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The Standard for Quality in Machinery Since 1834

J. M. LEHMANN COMPANY, INC.

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Special Aromatics
for the
Soap Perfumer's Needs
Creating aromatics and perfume compounds to meet the specialized needs of the soap and cosmetic industry has long been an important part of Givaudan service as a leading manufacturer of aromatic chemicals. And many of the most successful and popular of soap perfumes have been supplied by Givaudan.
Our long experience, skilled technical staff, and complete laboratory and development facilities are available to meet your needs. Consult us on your present requirements. We have a well-balanced stock of materials available for use in meeting your current demands. Your inquiry will receive our prompt and considered attention.
GIVAUDAN-DELAWANNA, INC.
330 WEST 42nd STREET • NEW YORK, N.Y.

SOAP PERFUMES

van Ameringen-Haebler, Inc., 315 Fourth Ave., N. Y.
Aromatic Products, Inc., 15 E. 30th St., N. Y.
Bayonne Co., 404 Fourth Ave., New York
Bush Pan America Ltd., 136 Liberty St., New York
Ph. Chaleyer, Inc., 160 E. 56th St., N. Y.
Antoine Chiris Co., Inc., 115 E. 23rd St., N. Y.
Compagnie Duval, 121 E. 24th St., N. Y.
Compagnie Parento, Croton-on-Hudson, N. Y.
Dodge & Olcott Co., 180 Varick St., N. Y.
P. R. Dreyer Inc., 119 W. 19th St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Felton Chemical Co., 603 Johnston Ave., Brooklyn
Firmenich & Co., 135 5th Ave., N. Y.
Florasynth Labs., 1513 Olmstead Ave., Bronx, N. Y.
Benj. French, Inc., 160 5th Ave., N. Y.
Fritzsche Bros., Inc., 76 Ninth Ave., N. Y.
Fuld Bros., 702-710 S. Wolfe St., Baltimore
General Drug Co., 64 Pacific St., Brooklyn, N. Y.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Kay-Fries Chemicals, Inc., 180 Madison Ave., N. Y.
Lautier Fils, 158 W. 18th St., N. Y.
Geo. Lueders & Co., 427 Washington St., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
Naugatuck Aromatics, 254 Fourth Ave., N. Y.
Neumann-Buslee & Wolfe, 224 W. Huron St., Chicago
New York Aromatics Co., 153 Waverly Pl., N. Y.
Norda Essential Oil & Chem. Co., 601 W. 16th St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
Polak & Schwartz., Inc., 667 Washington St., N. Y.
Polak's Frutal Works, 36-14 35th St., L. I. City, N. Y.
Roure-Dupont, Inc., 366 Madison Ave., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y.
Edwin Seebach Co., 912 Broadway, N. Y.
Standard Synthetics Co., 119 W. 25th St., N. Y.
Synfleur Scientific Labs., Monticello, N. Y.
Tombarel Prods. Corp., 12 E. 22nd St., N. Y.
Ungerer & Co., 161 Sixth Ave., N. Y.
Van Dyk & Co., 57 Wilkinson Ave., Jersey City, N. J.
Albert Verley, Inc., 232 E. Ohio St., Chicago

SOAP POWDER MILLS

Abbe Engineering Co., 50 Church St., N. Y.
Consolidated Products Co., 15 Park Row, N. Y. (Used)
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 359 46th St., Brooklyn, N. Y.
J. M. Lehmann Co., 250 W. Broadway, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th, Chicago (Used)
Prater Pulverizing Co., 1825 55th Ave., Chicago
Stein Equipment Corp., 426 Broome St., N. Y. (Used)

SOAP POWDERS
(Do not confuse with pure powdered soaps)

American Soap Powder Wks., Inc., 98 Van Dyk St., Brooklyn
American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Wks., 1355 W. 31st St., Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Beach Soap Co., Lawrence, Mass.
Cowles Detergent Co., 7016 Euclid Ave., Cleveland
Chemical Mfg. & Dist. Co., Easton, Pa.
Cudahy Packing Co., 221 N. La Salle St., Chicago
Du Bois Soap Co., Cincinnati
J. Eavenson & Sons, Camden, N. J.
Haskins Bros. & Co., Omaha
Hercules Powder Co., Wilmington, Del.
Hewitt Soap Co., Dayton, O.
Hockwald Chemical Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Geo. E. Marsh Co., 200 Broadway, Cambridge, Mass.
Napthole, Inc., 15 E. 26th St., N. Y.
National Milling & Chem. Co., Manayunk, Phila.
North Coast Soap & Chem. Wks., Seattle, Wash.
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Cincinnati
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
S. & S. Soap Co., 324 Barretto St., Bronx, N. Y.
Stevens Soap Corp., 200 Sullivan St., Brooklyn
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Union Stock Yards, Chicago
Vasco Prods. Co., Elmira, N. Y.
Vliet Ccap Co., 638 Monroe St., Brooklyn
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
M. Werk Co., St. Bernard, Cincinnati
Chas. W. Young & Co., Phila.

SOAP PRESSES (see PRESSES)

SOAP SHEETS (see SOAP PAPER)

SOAP SOLUTIONIZING DEVICE (Solutionizing and dispensing drums for soft soaps)

Clifton Chemical Co., 247 Front St., N. Y.
Davies-Young Soap Co., Dayton, O.
Rudolph Guth, Inc., 9604 Meech Ave., Cleveland, Ohio

SOAP SLABBERS (see SOAP MACHINERY)

SOAP STOCK (Boiled down cotton oil soap stock, etc.)

(see also Brokers and Dealers)

Armour & Co., 1355 W. 31st St., Chicago
Brode Corp., Memphis, Tenn.
T. G. Cooper & Co., 47 N. 2nd St., Phila.
Durkee Famous Foods, Inc., 2670 Elston Ave., Chicago
Wm. H. Floyd & Co., Los Angeles
H. Hentz & Co., 60 Beaver St., N. Y.
Portsmouth Cotton Oil Refining Co., Portsmouth, Va.
Procter & Gamble Co., Cincinnati, O.
Southern Cotton Oil Co., 21 West St., N. Y.
A. E. Staley Mfg. Co., Decatur, Ill.
Welch, Holme & Clark, Inc., 563 Greenwich St., N. Y.

SOAP VALVES (see Soap Dispensing Systems)

SOAP WRAPPING MACHY. (see WRAPPING MACHY.)

SOAPLESS DETERGENTS (see DETERGENTS, SYNTHETIC)

SOAPLESS SHAMPOOS (see SHAMPOOS SOAPLESS)

SOAPS, AUTO (see POTASH SOAPS)

SOAPS, FLOATING (see FLOATING SOAPS)

SOAPS, GRANULATED (see LAUNDRY SOAPS, GRANULATED)

SOAPS, LIQUID (see POTASH SOAPS)

SOAPS, MEDICINAL, CAKE (see MEDICINAL SOAPS, CAKE)

SOAPS, MOTTLED (see MOTTLED SOAPS)

SOAPS, PINE SCRUB (see PINE SCRUB SOAPS)

SOAPS, SCOURING (see SCOURING SOAPS)

SOAPS, SCRUBBING (see FLOOR SCRUB SOAPS)

SOAPS, SURGICAL (see POTASH SOAPS)

SOAPS, TEXTILE (see TEXTILE SOAPS)

SODA ASH

(see also Dealers)

American Cyanamid & Chemicals Corp., 30 Rockefeller Plaza, N. Y.
Diamond Alkali Co., 535 Smithfield St., Pittsburgh
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Alkali Wks., 60 E. 42nd St., N. Y.
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Philipp Bros., 70 Pine St., N. Y.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
Solvay Sales Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Wyandotte Chem. Corp., Wyandotte, Mich.

SODA (Modified)

(see also Dealers)

American Cyanamid & Chemicals Corp., 30 Rockefeller Plaza, N. Y.
Diamond Alkali Co., 535 Smithfield St., Pittsburgh
E. I. du Pont de Nemours Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Alkali Wks., 60 E. 42nd St., N. Y.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
E. M. Sergeant Pulp & Chem. Co., 350 5th Ave., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Wyandotte Chem. Corp., Wyandotte, Mich.

SODIUM ALGINATE

Kelco Co., 31 Nassau St., N. Y.

SODIUM BICARBONATE

(see also Dealers)

American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
Church & Dwight Co., 70 Pine St., N. Y.
Diamond Alkali Co., 535 Smithfield St., Pittsburgh
E. I. du Pont de Nemours Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Alkali Wks., 60 E. 42nd St., N. Y.
Monsanto Chem. Co., St. Louis
Pennsylvania Salt Mfg. Co., Widener Bldg., Philadelphia
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
E. M. Sergeant Pulp & Chemical Co., Empire State Bldg., N. Y.
Solvay Sales Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch Holme & Clark Co., 563 Greenwich St., N. Y.
Wyandotte Chem. Corp., Wyandotte, Mich.

SODIUM BICHROMATE

(see also Dealers)

American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
Diamond Alkali Co., 535 Smithfield St., Pittsburgh
E. I. du Pont de Nemours Co., Wilmington, Del.
General Chem. Co., 40 Rector St., N. Y.
Merck & Co., Rahway, N. J.
Mutual Chemical Co., 270 Madison Ave., N. Y.
Natural Products Refining Co., 900 Garfield Ave., Jersey City, N. J.
Prior Chem. Corp., 420 Lexington Ave., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
E. M. Sergeant Pulp & Chemical Co., Empire State Bldg., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

SODIUM BISULFATE (see NITRE CAKE)

SODIUM CARBONATE (see SODA ASH)

SODIUM CYANIDE

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
E. I. du Pont de Nemours Co., Wilmington, Del.
General Chem. Co., 40 Rector St., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

SODIUM FLUORIDE (see FLUORIDES)

SODIUM FLUORSILICATE (see SODIUM SILICO-FLUORIDES)

SODIUM HYDROSULFITE

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
J. T. Baker Chem. Co., Phillipsburg, N. J.
E. I. du Pont de Nemours Co., Wilmington, Del.
General Chem. Co., 40 Rector St., N. Y.
General Dyestuffs Corp., 435 Hudson St., N. Y.
Merck & Co., Rahway, N. J.
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Royce Chemical Co., Carlton Hill, N. J.

SODIUM HYPOCHLORITE (see LAUNDRY BLEACH)

SODIUM HYPOSULFITE (Thiosulfate)

E. I. du Pont de Nemours Co., Wilmington, Del.
General Chem. Co., 40 Rector St., N. Y.
A. R. Maas Chem. Co., South Gate, Calif.
Mallinckrodt Chem. Wks., St. Louis
Merck & Co., Rahway, N. J.
Rohm & Haas, 222 W. Washington Sq., Phila.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
E. M. Sergeant Pulp & Chemical Co., Empire State Bldg., N. Y.

SODIUM LAURYL SULFATE (see SULFONATED FATTY ALCOHOLS

SODIUM METAPHOSPHATE

Blockson Chemical Co., Joliet, Ill.
Calgon, Inc., 300 Ross St., Pittsburgh
E. I. du Pont de Nemours Co., Wilmington, Del.
Victor Chem. Wks., 141 W. Jackson Blvd., Chicago

SODIUM METASILICATE

Cowles Detergent Co., 7016 Euclid Ave., Cleveland
Diamond Alkali Co., Standard Silicate Div., 535 Smithfield St., Pittsburgh
E. I. du Pont de Nemours Co., Wilmington, Del.
General Chem. Co., 40 Rector St., N. Y.
MacKenzie Labs., Front & Yarnell Sts., Chester, Pa.
Mechling Bros. Chemical Co., Camden, N. J.
Philadelphia Quartz Co., 125 So. 3rd St., Phila.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

SODIUM NAPHTHENATE

E. I. du Pont de Nemours Co., Wilmington, Del.
General Dyestuffs Corp., 435 Hudson St., N. Y.
National Aniline & Chem. Co., 40 Rector St., N. Y.

SODIUM ORTHOSILICATE

Diamond Alkali Co., Standard Silicate Div., 535 Smithfield St., Pittsburgh
Pennsylvania Salt Mfg. Co., 1000 Widener Bldg., Phila.
Philadelphia Quartz Co., 125 So. 3rd St., Phila.

SODIUM PERBORATE

(*see also Dealers*)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
E. I. du Pont de Nemours Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Merck & Co., Rahway, N. J.

SODIUM PYROPHOSPHATE (see TETRA SODIUM PYROPHOSPHATE)

SODIUM SESQUICARBONATE

Diamond Alkali Co., 535 Smithfield St., Pittsburgh
Mathieson Alkali Wks., 60 E. 42nd St., N. Y.
Mechling Bros. Chemical Co., Camden, N. J.
Solvay Sales Corp., 40 Rector St., N. Y.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

SODIUM SESQUISILICATE

Diamond Alkali Co., Standard Silicate Div., 535 Smithfield St., Pittsburgh
Philadelphia Quartz Co., 125 So. 3rd St., Phila.
Jos. Turner & Co., Ridgefield, N. J.

SODIUM SILICATE

(*see also Dealers*)

American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
Diamond Alkali Co., Standard Silicate Div., 535 Smithfield St., Pittsburgh
E. I. du Pont de Nemours Co., Wilmington, Del.
General Chem. Co., 40 Rector St., N. Y.
Mechling Bros. Chem. Co., Camden, N. J.
Philadelphia Quartz Co., 125 So. 3rd St., Phila.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

SODIUM SILICOFLUORIDE

American British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
American Fluoride Corp., 151 W. 19th St., N. Y.
Armour Fertilizer Wks., Atlanta, Ga.
Blockson Chemical Co., Joliet, Ill.
E. I. du Pont de Nemours Co., Wilmington, Del.
General Chem. Co., 40 Rector St., N. Y.
Charles Hardy, Inc., 415 Lexington Ave., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
W. B. Lawson, Inc., Union Commerce Bldg., Cleveland
Merck & Co., Rahway, N. J.
E. M. Sergeant Pulp & Chemical Co., 350 5th Ave., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Tennessee Corp., Atlanta, Ga.
Jos. Turner & Co., Ridgefield, N. J.

SOLUBLE OILS (Sulfonated Oils)

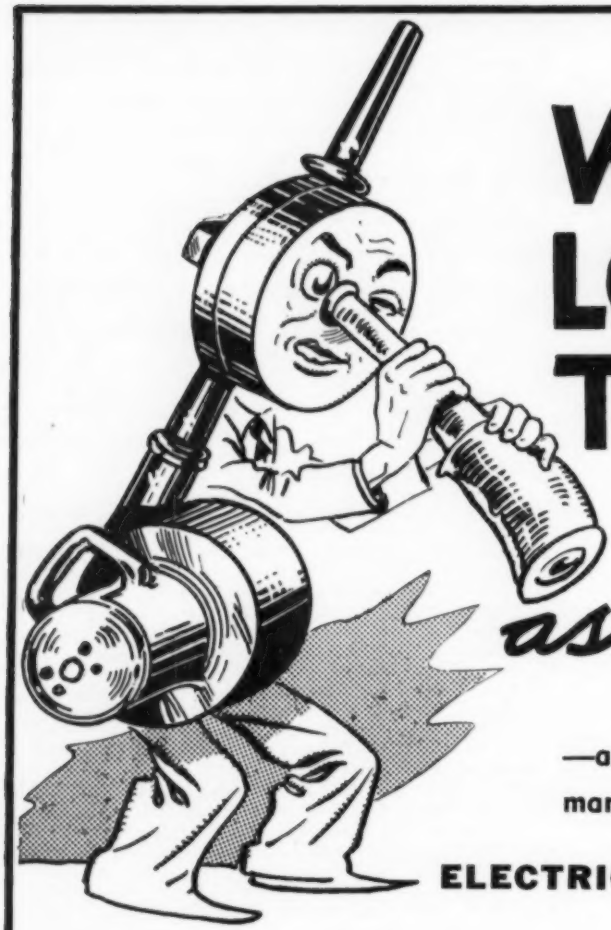
American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
Apex Chemical Co., 225 W. 34th St., N. Y.
Arabol Mfg. Co., 110 E. 42nd St., N. Y.
Atlantic Refining Co, 260 S. Broad St., Phila.
Napthole, Inc., 15 E. 26th St., N. Y.
Richards Sales Corp., Warren and Morris Sts., Jersey City, N. J.
L. Sonneborn Sons, Inc., 88 Lexington Ave., N. Y.
Jacques Wolf & Co., Passaic, N. J.

SOLVENT NAPHTHA

Anderson-Prichard Oil Corp., Oklahoma City, Okla.
Atlantic Refining Co., 260 S. Broad St., Phila.
Barrett Co., 40 Rector St., N. Y.
S. H. Bell Co., 1407 Gulf Bldg., Pittsburgh
Commerce Petroleum Co., 2923 Lock St., Chicago
Deep Rock Oil Corp., 155 N. Clark St., Chicago
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
Neville Co., Pittsburgh
Pennsylvania Refining Co., Butler, Pa.
Pittsburgh Coal Carbonization Co., Oliver Bldg., Pittsburgh
Reilly Tar & Chemical Corp., Indianapolis
Shell Oil Co., 50 W. 50th St,. N. Y.
Shell Petroleum Corp., Shell Bldg., St. Louis
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co., (Ind.), 910 S. Michigan Ave., Chicago
Woburn Degreasing Co. of N. J., Harrison, N. J.

SOLVENTS, ORGANIC (Chlorinated, etc.)

Barrett Co., 40 Rector St., N. Y.
Carbide & Carbon Chem. Corp., 30 E. 42nd St., N. Y.



WE'RE LOOKING, TOO— — — *as hard as you are!*

—a statement of facts addressed to the many customers of Adam A. Breuer's

ELECTRIC INSECTICIDE SPRAYER

WITH increased restrictions on materials and their growing scarcity, even in relation to production of war essentials, we have been left completely without materials with which to produce ADAM A. BREUER'S ELECTRIC INSECTICIDE SPRAYERS.

So long as present conditions continue, which will undoubtedly be until the war emergency is over, there is no possibility of further output of our Insecticide Sprayers, the production of which was discontinued some time ago. This, as you will readily understand, is a condition over which we, as manufacturers, have no control.

Our purpose, therefore, in restating our position to our customers and prospective buyers of our Sprayer equipment, is to let them know that we still have in mind their problems and ask them to bear with us until such time as normal business relationships are resumed. For your patience and cooperation we again extend our sincere appreciation.

We do not sell insecticides. Our business is the manufacture of Sprayers (Patented in U. S. A. and foreign countries).

BREUER ELECTRIC MFG. CO.

5120 N. Ravenswood Ave., CHICAGO, ILL.

SOLVENTS, ORGANIC (Contd.)

Commercial Solvents Corp., Terre Haute, Ind.
Crosby Naval Stores, Inc., Picayune, Miss.
Diamond Alkali Co., 535 Smithfield St., Pittsburgh
Delta Chemical Co., 2101 Washington Blvd., Baltimore
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours Co., Wilmington, Del.
Hercules Powder Co., Wilmington
Hooker Electrochemical Co., Niagara Falls, N. Y.
Kessler Chem. Corp., Philadelphia
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
Neville Co., Pittsburgh
Pennsylvania Refining Co., Butler, Pa.
Pittsburgh Coal Carbonization Co., Oliver Bldg., Pittsburgh
Reilly Tar & Chemical Corp., Indianapolis
Sharples Solvents Corp., Phila.
Standard Alcohol Co., 26 Broadway, N. Y.
U. S. Industrial Chem. Co., 60 E. 42nd St., N. Y.
Velsicol Corp., 120 E. Pearson St., Chicago
Westvaco Chlorine Prods. Co., 405 Lexington Ave., N. Y.

SOLVENTS, PETROLEUM

American Mineral Spirits Co., 230 N. Michigan Ave., Chicago
Anderson-Prichard Oil Co., Oklahoma City, Okla.
Atlantic Refining Co., 260 S. Broad St., Philadelphia
Carbide & Carbon Chem. Corp., 30 E. 42nd St., N. Y.
Commerce Petroleum Co., 2923 Lock St., Chicago
Deep Rock Oil Corp., 155 N. Clark St., Chicago
E. I. du Pont de Nemours Co., Wilmington, Del.
Pennsylvania Refining Co., Butler, Pa.
Shell Oil Co., 50 W. 50th St,. N. Y.
Sinclair Refining Co., 630 5th Ave., N. Y.
Skelly Oil Corp., 605 W. 47th St., Kansas City, Mo.
L. Sonneborn Sons, 88 Lexington Ave., N. Y.
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co., (Ind.), 910 S. Michigan Ave., Chicago
Standard Oil Co. (Ohio), Midland Bldg., Cleveland
Velsicol Corp., 120 E. Pearson St., Chicago

SOYA BEAN OIL

(see also Brokers and Dealers)

Balfour, Guthrie Co., 67 Wall St., N. Y.
Irving R. Boody & Co., 120 Wall St., N. Y.
E. F. Drew & Co., Wecoline Div., Boonton, N. J.
Eastern Industries, Inc., Ridgefield, N. J.
William O. Goodrich Co., Milwaukee, Wis.
W. R. Grace & Co., 7 Hanover Sq., N. Y.
Otto A. C. Hagen Corp., Public Ledger Bldg., Phila.
Spencer Kellogg & Son, Buffalo, N. Y.
Murray Oil Products Co., 21 West St., N. Y.
Pacific Vegetable Oil Co., 62 Townsend St., San Francisco
Procter & Gamble Co., Cincinnati
Purina Mills, St. Louis
J. H. Redding Co., 17 Battery Pl., N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
A. E. Staley Mfg. Co., Decatur, Ill.
A. E. Starkie Co., 5461 W. Division St., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

SPERMACETI

E. A. Bromund Co., 258 Broadway, N. Y.
A. C. Drury & Co., 210 E. Water St., Chicago
Innis, Speiden & Co., 117 Liberty St., N. Y.
Lenape Trading Co., 233 Broadway, N. Y.
George H. Lincks, 155 John St., N. Y.
Neumann-Buslee & Wolfe, 224 W. Huron St., Chicago
Orbis Products Corp., 215 Pearl St., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Smith & Nichols, 121 Maiden Lane, N. Y.
Strohmeyer & Arpe Co., 139 Franklin St., N. Y.
Will & Baumer Candle Co., Syracuse, N. Y.

SPONGES (Natural and Synthetic)

Allied Industrial Prods. Co., 620 N. Michigan, Chicago
American Sponge & Chamois Co., 47 Ann St., N. Y.
American Standard Mfg. Co., 2509 S. Green St., Chicago
Atlas Sponge Co., 291 Church St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington
Florida Sponge & Chamois Co., 42 Cliff St., N. Y.
Great Eastern Sponge & Chamois Co., 833 N. Catt. Pk. Ave., Baltimore
James H. Rhodes & Co., 157 W. Hubbard St., Chicago
Robinson Sponge Co., 1805 Atlantic Ave., Brooklyn

SPOTTING FLUIDS (see CLEANING FLUIDS)

SPRAYERS, BOTTLE

Arnold-Copeland Co., 22 Elkins St., So. Boston, Mass.
Federal Tool Corp., 412 Leavitt St., Chicago
Wilco Co., 7016 McKinley Ave., Los Angeles

SPRAYERS, COMPRESSED AIR

Acmeline Mfg. Co., Traverse City, Mich.
Binks Mfg. Co., 3114 Carroll Ave., Chicago
Breuer Electric Mfg. Co., 5120 N. Ravenswood Ave., Chicago
E. C. Brown Co., Rochester, N. Y.
DeVilbiss Co., Toledo, O.
Dobbins Mfg. Co., Elkhart, Ind.
Electric Sprayit Co., 1415 Illinois Ave., Sheboygan, Wis.
Fumeral Co., Racine, Wis.
Hudson Mfg. Co., 589 E. Illinois St., Chicago
Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago
Lowell Mfg. Co., North Pier Terminal, Chicago
Miller-Simons, Inc., 2900 S. 61st Court, Chicago
Mystic Products Co., 417 No. 5th St., Minneapolis
D. B. Smith & Co., Utica, N. Y.
Simmon Paint Spray Brush Co., Dayton, O.
Volume Sprayer Mfg. Co., Tulsa, Okla.

SPRAYERS, ELECTRIC

Acmeline Mfg. Co., Traverse City, Mich.
Binks Mfg. Co., 3114 Carroll Ave., Chicago
Breuer Electric Mfg. Co., 5120 N. Ravenswood Ave., Chicago
Dobbins Mfg. Co., Elkhart, Ind.
DuLa Mfg. Co., 351 Atlantic Ave., Brooklyn, N. Y.
Electric Sprayit Co., 1415 Illinois Ave., Sheboygan, Wis.
Fumeral Co., Racine, Wis.
Hudson Mfg. Co., 589 E. Illinois St., Chicago
Lowell Mfg. Co., North Pier Terminal, Chicago
Metal Specialties Mfg. Co., 3208 Carroll Ave., Chicago
D. B. Smith Co., Utica, N. Y.

SPRAYERS, ELECTRIC, STEAM

DuLa Mfg. Co., 351 Atlantic Ave., Brooklyn
Electric Sprayit Co., 1415 Illinois Ave., Sheboygan, Wis.
Fumeral Co., Racine, Wis.
Kaz Mfg. Co., 611 W. 43rd St., N. Y.
Lowell Mfg. Co., North Pier Terminal, Chicago
Mystic Products Co., 417 N. Fifth St., Minneapolis

SPRAYERS, HAND

Acmeline Mfg. Co., Traverse City, Mich.
R. E. Chapin Mfg. Works, Batavia, N. Y.

SPRAYERS, HAND (Contd.)

Continental Can Co., 100 E. 42nd St., N. Y.
Dobbins Mfg. Co., Elkhart, Ind.
Electric Sprayit Co., 1415 Illinois Ave., Sheboygan, Wis.
Hudson Mfg. Co., 589 E. Illinois St., Chicago
Jaeckh Mfg. Co., Cincinnati
Lowell Mfg. Co., North Pier Terminal, Chicago
D. B. Smith Co., Utica, N. Y.
Standard Container, Inc., Rockaway, N. J.
Universal Metal Prods. Co., Lowell, Mich.
Volume Sprayer Mfg. Co., Tulsa, Okla.
Wilco Co., 6800 McKinley Ave., Los Angeles

SPRAYERS, MOUTH

Acmeline Mfg. Co., Traverse City, Mich.
Arnold-Copeland Co., 22 Elkins St., So. Boston, Mass.
H. D. Hudson Mfg. Co., 589 E. Illinois St., Chicago
Lowell Mfg. Co., North Pier Terminal, Chicago
D. B. Smith & Co., Utica, N. Y.
Standard Container, Inc., Rockaway, N. J.

SPREADERS for INSECTICIDE (see CLAYS)

SQUEEGEES

Ardmore Mfg. Co., 5082 N. Lincoln Ave., Chicago
W. J. Dennis & Co., 1732 N. Kolmar, Chicago
A F. Dormeyer Mfg. Co., 4316 N. Kilpatk. St., Chicago
Aug. Hanke & Son Co., 6326 W. Guyer Ave., Chicago
Illinois Duster & Brush Co., 1944 Webster Ave., Chicago
J. Racenstein & Co., 621 Broadway, N. Y.
Reliance Hardward & Mfg. Co., 1438 N. Keating St., Chicago

SQUILLS (Rodent Poison)

Associated Chemists, Inc., 1906 N. Halsted Ave., Chicago
J. L. Hopkins & Co., 220 Broadway, N. Y.
McLaughlin Gormley King Co., 1715 5th St., S. E., Minneapolis, Minn.
S. B. Penick & Co., 50 Church St., N. Y.
R. J. Prentiss & Co., 80 John St., N. Y.
Ratin Laboratory, 116 Broad St., N. Y.
York Chem. Co., 424 W. 18th St., N Y

STANNOUS CHLORIDE (see TIN CRYSTALS)

STARCH

(see also Dealers)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Arabol Mfg. Co., 110 E. 42nd St., N. Y.
T. G. Cooper & Co., 47 N. 2nd St., Phila
A. C. Drury & Co., 219 E. N. Water St., Chicago
Innis, Speiden & Co., 117 Liberty St., N. Y.
Keever Starch Co., Columbus, O.
H. Kohnstamm & Co., 91 Park Pl., N. Y.
National Starch Prods. 820 Greenwich St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
L. A. Salomon & Bro., 216 Pearl St.
A. E. Staley Mfg. Co., Decatur, Ill.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

STEARATES (Zinc, Calcium, Magnesium, etc)

(see also Dealers)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
E. I. du Pont de Nemours Co., Wilmington, Del.
Franks Chem. Prods. Co., 55 33rd St., Brooklyn
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Hooker Electrochemical Co., Niagara Falls, N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chem. Wks., St. Louis
Merck & Co., Rahway, N. J.
National Oil Products Co., Harrison, N. J.
M. W. Parsons, Inc., 59 Beekman St., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.

STEARIC ACID

(see also Brokers and Dealers)

American British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Armour & Co., 1355 W. 31st St., Chicago
Celina Stearic Acid Co., Celina, Ohio
Century Stearic Acid Candle Wks., 41 E. 42nd St., N. Y.
Darling & Co., 4201 S. Ashland Ave., Chicago
E. F. Drew & Co., Wecoline Div., Boonton, N. J.
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries, Inc., 4300 Carew Tower, Cincinnati
A. Gross & Co., 295 Madison Ave., N. Y.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Harkness & Cowing, Ivorydale, Cincinnati
Innis, Speiden & Co., 17 Liberty St., N. Y.
National Oil Products Co., Harrison, N. J.
Orbis Products Corp., 215 Pearl St., N. Y.
Procter & Gamble Co., Cincinnati
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
E. M. Sergeant Pulp & Chem. Co., Empire State Bldg., N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
A. E. Starkie, 5461 W. Division St., Chicago
Theobald Industries, Kearny, N. J.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
M. Werk Co., St. Bernard, Cincinnati
Will & Baumer Candle Co., Syracuse, N. Y.
Wilson-Martin Co., Snyder Ave. & Swanson St., Phila.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.

STEARINE

(see also Brokers and Dealers)

Celina Stearic Acid Co., Celina, Ohio
Darling & Co., 4201 S. Ashland Ave., Chicago
Durkee Famous Foods, Inc., 2670 Elston Ave., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries, Inc., 4300 Carew Tower, Cincinnati
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Independent Mfg. Co., Bridesburg P. O., Phila.
Morris Co., Union Stock Yards, Chicago
Pacific Vegetable Oil Corp., 62 Townsend St., San Francisco
Procter & Gamble Co., Cincinnati
Werner G. Smith Co., 2191 W. 110th St., Cleveland
A. E. Starkie, 5461 W. Division St., Chicago
Louis Stern Sons., Inc., Produce Exch., N. Y.
Swift & Co., Union Stock Yards., Chicago
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Wilson & Co., 4100 Ashland Ave., Chicago

STEARINE PITCH

Allied Asphalt & Mineral Corp., 217 Broadway, N. Y.
Armour & Co., 1355 W. 31st St., Chicago
Darling & Co., 4201 S. Ashland Ave., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries, Inc., 4300 Carew Tower, Cincinnati
A. Gross & Co., 295 Madison Ave., N. Y.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Procter & Gamble Co., Ivorydale, O.

STEARINE PITCH (Contd.)

Werner G. Smith Co., 2191 W. 110th St., Cleveland
A. E. Starkie, 5461 W. Division St., Chicago
Wilson & Co., 4100 Ashland Ave., Chicago

STEEL DRUMS (see DRUMS, STEEL)

STEEL PAILS (see PAILS, STEEL)

STEEL, NICKEL CLAD

Illinois Steel Co., 208 S. La Salle St., Chicago
International Nickel Co., 67 Wall St., N. Y.
Lukens Steel Co., Coatesville, Pa.
Republic Steel Corp., Republic Bldg., Cleveland, O.

STEEL TANKS (see TANKS, STEEL)

STEEL WOOL

American Steel Wool Mfg. Co., 42-24 Orchard St., L. I. City, N. Y.
International Steel Wool Co., Springfield, Ohio
James H. Rhodes & Co., 157 W. Hubbard St., Chicago

STODDARD'S SOLVENT (see SOLVENTS, PETROLEUM)

STORAGE TANKS (see TANKS, STORAGE, etc.)

SUDSING EQUIPMENT (see SOAP SOLUTIONIZING DEVICE)

SULPHATED FATTY ALCOHOLS (and other Non-Soap Organic Detergents, and Derivatives)

Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
E. I. du Pont de Nemours Co., Wilmington, Del.
General Dyestuffs Corp., 435 Hudson St., N. Y.
Hummel Chemical Co., 90 West St., N. Y.
N. I. Malmstrom & Co., 147 Lombardy St., Brooklyn
Michael Export Co., 90 Broad St., N. Y.
National Aniline & Chem. Co., 40 Rector St., N. Y.
National Oil Products Co., Harrison, N. J.
Procter & Gamble Co., Cincinnati
Richards Sales Corp., Jersey City, N. J.
Sandoz Chemical Works, 61 Van Dam St., N. Y.
Jacques Wolfe & Co., Passaic, N. J.

SULFONATED OILS

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Atlantic Refining Co., 260 S. Broad St., Phila.
E. F. Drew & Co., Wecoline Div., Boonton, N. J.
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries, 4300 Carew Tower, Cincinnati
Kali Mfg. Co., 1408 N. Front St., Philadelphia
National Oil Products Co., Harrison, N. J.
Richards Sales Corp., Jersey City, N. J.
Sandoz Chemical Works, 61 Van Dam St., N. Y.
L. Sonneborn Sons, Inc., 8 Lexington Ave., N. Y.
A. E. Starkie, 5461 W. Division St., Chicago
Arthur C. Trask Co., 4103 S. La Salle St., **Chicago**
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.
Jacques Wolfe & Co., **Passaic, N. J.**

SULFOXYLATES (Soap Bleaches)

Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Jacques Wolfe & Co., Passaic, N. J.

SULFUR CANDLES

Reliable Chemical Co., Passaic, N. J.
White Tar Co., Kearny, N. J.

SUPERFATTING AGENTS (for Toilet Soaps)

N. I. Malmstrom Co., 147 Lombardy St., Bklyn.
National Oil Products Co., Harrison, N. J.
Pfaltz & Bauer, 350 5th Ave., N. Y.
Pylam Products Co., 799 Greenwich St., N. Y.
Richards Sales Corp., Jersey City, N. J.
Welch, Holme & Clark Co., Inc., 563 Greenwich St., N. Y.

SUPERHEATERS

Eureka Machine Co., 2601 Vega Ave., **Cleveland**
Ernest Scott & Co., Fall River, Mass.
The Superheater Co., 60 E. 42nd St., N. Y.

SURGICAL SOAPS (see POTASH SOAPS)

SWEEPING COMPOUNDS

American Excelsior Corp., 1000 N. Halstead St., Chicago
American Soap & Washoline Co., Cohoes, N. Y.
Banner Chemical Prod. Corp., 329 Mulberry St., **Newark**, N. J.
Baums Catorine Co., 200 Matthews St., Rome, N. Y.
Philip Carey Mfg. Co., Lockland, Cincinnati
Champion Mfg. Co., 322 S. Erie St., Indianapolis, Ind.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Creco Co., Inc., Creco Bldg., Long Island City, N. Y.
Fitch Dustdown Co., 801 S. Howard St., Baltimore
Fuld Bros., 702 S. Wolfe St., Baltimore
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San **Francisco**
R. M. Hollingshead Corp., Camden, N. J.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Hysan Products Co., 58 E. Cullerton St., Chicago
Frank Miller & Sons, 2240 W. 58th St., Chicago
North Coast Soap & Chem. Wks., Seattle, Wash.
Pacific Chem. Co., 1421 N. Main St., Los Angeles
Palmer Products, Inc., Waukesha, Wis.
Peck's Prods. Co., 5238 N. Second St., St. Louis
Pioneer Mfg. Co., Cleveland, O.
Port Huron Detergent Co., Port Huron, Mich.
Puritan Chem. Co., 209 Peters St., N. W. Atlanta
Theo. B. Robertson Prods. Co., 700 W. Division St., **Chicago**
Rochester Germicide Co., Rochester, N. Y.
Sanco Prods. Inc., Greenville, O.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Jno. C. F. Snyder & Sons, Inc., 2304 N. 28th St., Phila.
Solshine Mfg. Co., 44 Brookline St., Cambridge, Mass.
Sweeping Compound Mnfrs. Co., 421 Broome St., N. Y.
Uncle Sam Chemical Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago

SYNTHETIC DETERGENTS (see DETERGENTS, SYNTHETIC)

SYNTHETIC INSECTICIDE CONCENTRATES (see INSECTICIDE CONCENTRATES, SYNTHETIC)

SYNTHETIC WAXES (see WAXES, SYNTHETIC)

TALC

American Cyanamid & Chem. Corp., 30 Rockefeller, Plaza, N. Y.
Binney & Smith Co., 41 E. 42nd St., N. Y.
Blue Ridge Talc Co., Henry, Va.
Chas. B. Chrystal Co., 16 Hudson, N. Y.
A. C. Drury & Co., 219 East North Water St., Chicago
E. I. du Pont de Nemours Co., Wilmington, Del.
Eastern Magnesia Talc Co., Burlington, Vt.
Enco Chem. Corp., 441 Lexington Ave., N. Y.
Fezandie & Sperrle, 205 Fulton St., N. Y.
Georgia Talc Co., Asheville, N. C.
Goris & Arnstein, 37th & Racine Ave., Chicago
K. F. Griffiths & Co., 110 E. 42nd St., N. Y.
Hammill & Gillespie, 225 Broadway, N. Y.
Hercules Powder Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Los Angeles Talc Co., Los Angeles, Cal.
Natura Minerals Co., 108 W. 6th St., Los Angeles
Orbis Products Corp., 215 Pearl St., N. Y.
Pacific Coast Talc Co., Los Angeles, Cal.
R. F. Revson Co., 144 W. 18th St., N. Y.
James H. Rhodes & Co., 157 W. Hubbard St., Chicago
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
A. E. Starkie, 5461 W. Division St., Chicago
Tamms Silica Co., 228 N. La Salle St., Chicago
Union Talc Co., 147 Nassau St., N. Y.
Welch, Holme & Clark Co., Inc., 563 Greenwich St., N. Y.
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.
Wyodak Chemical Co., 4600 E. 71st St., Cleveland

TALL OIL (TALLOL)

Champion Paper & Fibre Co., Canton, North Carolina
Industrial Chem. Sales Div., West Va. Pulp & Paper Co. 230 Park Ave., N. Y.
Chas. L. Read & Co., 120 Greenwich St., N. Y.
Welch, Holme & Clark Co., 563 Greenwich St., N. Y.

TALLOW

(see also Brokers and Dealers)

Armour & Co., 1355 W. 31st St., Chicago
Belleville Rendering Co., Belleville, Ill.
Consolidated Rendering Co., 178 Atlantic Ave., Boston
Cudahy Packing Co., 111 W. Monroe St., Chicago
Darling & Co., 4201 S. Ashland Ave., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
Otto A. C. Hagen Corp., Public Ledger Bldg., Phila.
Independent Mfg. Co., Bridesburg P. O., Phila.
Long Island Soap Co., 29 Bridgewater St., Brooklyn
Louisville Butchers' Hide & Tallow Co., Louisville, Ky.
Newman Tallow & Soap Mach. Co., 1051 W. 35th, Chicago
Willibald Schaefer Co., Foot of Bremen Ave., St. Louis
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Swift & Co., Union Stock Yards, Chicago
Theobald Industries, Kearny, N. J.
Toledo Tallow Co., Toledo, Ohio
Waltham Tallow Co., Waltham, Mass.
Wayne Soap Co., Detroit
Welch, Holme & Clark Co., Inc., 563 Greenwich St., N. Y.
Wilson & Co., Union Stock Yards, Chicago
Wilson-Martin Co., Swanson St., Phila.

TALLOW CHIP SOAP (see CHIP SOAPS)

TALLOW OIL

(see also Brokers and Dealers)

Armour & Co., 1355 W. 31st St., Chicago
Consolidated Rendering Co., 40 N. Market St., Boston
Cudahy Packing Co., 111 W. Monroe St., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Independent Mfg. Co., Bridesburg, P. O., Phila
Swift & Co., Union Stock Yards, Chicago
Toledo Tallow Co., Toledo, Ohio
Waltham Tallow Co., Waltham, Mass.
Welch, Holme & Clark Co., Inc., 563 Greenwich St., N. Y.
West Coast Fert. & Rendering Co., Los Angeles
Wilson & Co., Union Stock Yards, Chicago

TANKS (Glass Lined Mixing and Storage)

Alsop Engineering Corp., 100 High St., Milldale, Conn.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Products Co., 15 Park Row, N. Y. (Used)
Edge Moor Iron Wks., 30 Rockefeller Plaza, N. Y.
Ertel Engineering Co., Kingston, N. Y.
Filter Paper Co., 57 E. 24th St., Chicago
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Littleford Bros., 453 E. Pearl St., Cincinnati
Metal Glass Products Corp., Belding, Mich.
Mixing Equipment Co., 1067 Garson Ave., Rochester, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th, Chicago
Pfaudler Co., 89 East Ave., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Scientific Filter Co., 1 Franklin Sq., N. Y.
Sprout, Waldron & Co., Muncy, Pa.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)

TANKS (for Liquid Soap Dispensing Systems)

Ampion Corp., 4-88—Forty-seventh Ave., L. I. City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Bobrick Mfg. Corp., 2619 Santa Fe Ave., Los Angeles
Brighton Copper Works, 2163 Western Ave., Cincinnati
Clifton Chemical Co., 247 Front St., N. Y.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., Inc., 702 S. Wolfe St., Baltimore
R. M. Hollingshead Corp., Camden, N. J.
Imperial Brass Mfg Co., 1200 W. Harrison St., Chicago
Moore Brothers Co., 67 Vestry St., N. Y.
Palmer Products, Inc., Waukesha, Wis.
Rochester Germicide Co., Rochester, N. Y.
John Trageser Steam Copper Works, Grand Ave., Maspeth, L. I., N. Y.
U. S. Sanitary Spec. Corp., 435 S. Western Ave., Chicago
West Disinfecting Co., Long Island City, N. Y.

TANKS (Steel Mixing and Storage)

Alloy Prods. Corp., 221 Madison St., Waukesha, Wis.
Alsop Engineering Corp., 100 High St., Milldale, Conn.
S. F. Bowser & Co., Ft. Wayne, Ind.
Brill Equipment Corp., 183 Varick St., N. Y. (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
Edge Moor Iron Wks., 30 Rockefeller Plaza, N. Y.
Filter Paper Co., 57 E. 24th St., Chicago
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
William Garrigue & Co., 9 S. Clinton St., Chicago
General American Transportation Corp., 135 S. LaSalle St., Chicago
Graver Tank & Mfg. Corp., 332 S. Michigan, Chicago
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Illinois Steel Corp., 208 S. LaSalle St., Chicago
Lancaster Iron Works, 564 S. Prince St., Lancaster, Pa.
J. M. Lehmann Co., 248 W. Broadway, N. Y.

TANKS (Steel Mixing and Storage) (Contd.)

Littleford Bros., 453 E. Pearl St., Cincinnati
Lukens Steel Corp., Coatesville, Pa.
Mixing Equipment Co., 1067 Garson Ave., Rochester, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Patterson Foundry & Machine Co., East Liverpool, Ohio
Petroleum Iron Works, Sharon, Pa.
Pfaudler Co., Rochester, N. Y.
Pioneer Tank & Boiler Co., Tulsa, Okla.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Read Machy Co., York, Pa.
Sprout, Waldron & Co., Muncy, Pa.
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Struthers-Wells-Titusville Corp., Warren, Pa.
John Trageser Steam Copper Works, Grand St., Maspeth, L. I., N. Y.

TANKS (Wooden Mixing and Storage)

Atlantic Tank & Barrel Co., North Bergen, N. J.
J. H. Day Co., 1144 Harrison Ave., Cincinnati
General Tank Corp., 30 Church St., N. Y.
Hauser-Stander Tank Co., Ivorydale, Cinn.
Kalamazoo Tank & Silo Co., Kalamazoo, Mich.
New England Tank & Tower Co., Everett, Mass.
Pacific Tank & Pipe Co., 334 Market St., San Francisco
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Read Machy. Co., York, Pa.
Sprout, Waldron & Co., Muncy, Pa.
Tippett & Wood, Phillipsburg, N. J.

TAR ACID OIL (see COAL TAR RAW MATERIALS)

TAR ACIDS, High Boiling

American-British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
Baird & McGuire, Inc., Holbrook, Mass.
Baird & McGuire, Inc., 1200 Switzer Ave., St. Louis
Barrett Co., 40 Rector St., N. Y.
S. H. Bell Co., 1407 Gulf Bldg., Pittsburgh
E. I. du Pont de Nemours Co., Wilmington, Del.
James Huggins & Son, 239 Medford St., Malden, Mass.
Wm. E. Jordan & Bro., 2590 Atlantic Ave., Brooklyn
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
Monsanto Chemical Co., St. Louis
Neville Co., Pittsburgh
Reilly Tar & Chem. Co., Indianapolis
Shell Oil Co., 50 W. 50th St., N. Y.

TERPENELESS OILS (see ESSENTIAL OILS)

TERPENYL ACETATE (see AROMATIC CHEMICALS)

TERPINEOL

(*see also Essential Oils*)

van Ameringen-Haebler, Inc., 315 Fourth Ave., N. Y.
Aromatic Products, Inc., 15 E. 30th St., N. Y.
Dodge & Olcott Co., 180 Varick St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Felton Chemical Co., 603 Johnson Ave., Brooklyn, N. Y.
Firmenich & Co., 135—5th Ave., N. Y.
General Drug Co., 64 Pacific St., Bklyn.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Hercules Powder Co., Wilmington
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y.
Ungerer & Co., 161 Sixth Ave., N. Y.

TETRACHLORETHYLENE (see SOLVENTS, ORGANIC)

TETRASODIUM PYROPHOSPHATE

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Blockson Chemical Co., Joliet, Ill.
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.
A. R. Maas Chem. Co., South Gate, Calif.
Monsanto Chemical Co., St. Louis
Philipp Bros., 70 Pine St., N. Y.
Rumford Chem. Wks., Providence, R. I.
Victor Chem. Wks., 141 W. Jackson Blvd., Chicago
Westvaco Chlorine Prods. Co., 405 Lexington Ave., N. Y.

TEXTILE SOAPS

American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Wks., 1355 W. 31st St., Chicago
Beach Soap Co., Lawrence, Mass.
Chemical Mfg. & Dist. Co., Easton, Pa.
Clifton Chemical Co., 247 Water St., N. Y.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Delta Chem. Co., 4 Payson Ave., N. Y.
J. O. Draper Co., Pawtucket, R. I.
E. I. du Pont de Nemours Co., Wilmington, Del.
J. Evanson & Sons, Del. & Penn Sts., Camden, N. J.
Enterprise Mill Soap Wks., 2231 N. 12th St., Philadelphia
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Arnold Hoffman & Co., Providence, R. I.
Holbrook Mfg. Co., Cole & 18th Sts., Jersey City
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Iowa Soap Co., 810 Valley St., Burlington, Ia.
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Laurel Soap Mfg. Co., Tioga St., Phila.
Long Island Soap Co., Meeker Ave. & Bridgewater St., Brooklyn, N. Y.
Los Angeles Soap Co., Los Angeles, Cal.
Geo. E. Marsh Co., 200 Broadway, Cambridge, Mass.
National Oil Products Co., Harrison, N. J.
National Soap Co., 357 South 26th St., Tacoma, Wash.
Newell Gutradt & Co., 350 Fremont St., San Francisco
Peck's Prods. Co., 5240 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Rome Soap Mfg. Co., Rome, N. Y.
Sandoz Chemical Works, 61 Van Dam St., N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Scholler Bros., 3301 Amber St., Philadelphia
Geo. E. Sherman Co., 153 Classon Ave., Brooklyn, N. Y.
L. Sonneborn Sons, Inc., 88 Lexington Ave., N. Y.
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Swift & Co., Union Stock Yards, Chicago
Ultra Chem. Wks., Inc., Paterson, N. J.
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
M. Werk Co., St. Bernard, Cincinnati
Jacques Wolf & Co., Passaic, N. J.
Chas. W. Young & Co., 1247 N. 26th St., Phila.

TEXTILE SODA (see SODA)

TEXTILE SPECIALTIES (Oils, softeners, etc.)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
Commercial Solvents Corp., Terre Haute, Ind.
J. O. Draper Co., Pawtucket, R. I.
E. I. du Pont de Nemours Co., Wilmington, Del.
Emery Industries, Inc., Carew Tower, Cincinnati
Enterprise Mill Soap Wks., 2231 N. 12th St., Philadelphia
Franklin Research Co., 5134 Lancaster Ave., Phila.
Hercules Powder Co., Wilmington, Del.
Arnold Hoffman & Co., Providence, R. I.
Laurel Soap Mfg. Co., Tioga St., Phila., Pa.
Michel Export Co., Inc., 90 Broad St., N. Y.
Napthole, Inc., 15 E. 26th St., N. Y.
National Aniline & Chem. Co., 40 Rector St., N. Y.
National Oil Products Co., Harrison, N. J.
National Soap Co., 357 South 26th St., Tacoma, Wash.
National Starch Prods. Co., 820 Greenwich St., N. Y.
Pennsylvania Refining Co., Butler, Pa.

SYNFLEUR

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A truly remarkable Vetivert character — very lasting and an excellent fixative.

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Synthetic Geranium Bourbon — especially adapted for soaps.

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Superior to natural Oil Ylang Ylang — more flowery and lasting.

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Atlanta Detroit Chicago Mexico, D. F. Santiago, Chile

TEXTILE SPECIALTIES (Contd.)

Sandoz Chemical Works, 61 Van Dam St., N. Y.
Scholler Bros., 3301 Amber St., Philadelphia
Geo. E. Sherman Co., 153 Classon Ave., Brooklyn, N. Y.
L. Sonneborn Sons, Inc., 88 Lexington Ave., N. Y.
Ultra Chem. Works, Inc., Kitay Bldg., Paterson, N. J.
Washine-National-Sands, Inc., 37-02 Northern Blvd., Long Island City
Woburn Degreasing Co. of N. J., Harrison, N. J.
Jacques Wolf & Co., Passaic, N. J.
Chas. W. Young & Co., 1247 N. 26th St., Phila.

THALLIUM SULFATE

Foote Mineral Co., 1609 Summer St., Phila.
Merck & Co., Rahway, N. J.
Ore & Chemical Corp., 80 Broad St., N. Y.
Pfaltz & Bauer, Inc., 350—5th Ave., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.

THEATRE SPRAYS

Antiseptol Co., 5524 Northwest Highway, Chicago
Banner Chemical Prod. Corp., 329 Mulberry St., Newark, N. J.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Brilco Labs., 947—61st., Bklyn.
Cenol Co., 4250 Pulaski Ave., Chicago
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Supply Co., 2450 Canal Rd., Cleveland
Chicago Sanitary Prods. Co., 3100 Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 247 Front St., N. Y.
Cole Labs., 22-19—37th Ave., L. I. City
Delta Chem. Co., 4 Payson Ave., N. Y.
Eagle Soap Corp., Huntington, Ind.
Elkay Products Corp., 323 W. 16th St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., Kensington, Philadelphia
Higley Chemical Co., Dubuque, Iowa
Hockwald Chemical Co., 135 Mississippi St., San Francisco
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Prods. Co., 58 E. Cullerton St., Chicago
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Cal.
Lewis Soap & Chem. Co., Oakland, Cal.
Palmer Products, Inc., Waukesha, Wisc.
Peck's Prods. Co., St. Louis
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Sanitary Prods. Co., 874 Seward St., Rochester, N. Y.
Selig Co., 336 Marietta St., Atlanta, Ga.
J. A. Tumbler Labs., 423 Hanover St., Hanover
Uncle Sam Chem. Co., 329 E. 29th St., N. Y.
U. S. Sanitary Specialties Corp., 435 S. Western Ave., Chicago
Victory Chem. Co., 148 Fairmount Ave., Phila.
World Spray Co., Inc., 5117 Central Ave., Los Angeles

THERMOMETERS (see INSTRUMENTS)

THYME OIL (see ESSENTIAL OILS)

THYMOL (see AROMATIC CHEMICALS)

TIGHT WRAPPING MACHINERY (see WRAPPING MACHINERY)

TIN CRYSTALS (Stannous Chloride)

American Cyanamid & Chem. Corp., 30 Rockefeller Plaza, N. Y.
J. T. Baker Chem. Co., Phillipsburg, N. J.
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Co., 40 Rector St., N. Y.
Metal & Thermit Corp., 120 Broadway, N. Y.

TITANIUM OXIDE (for toilet soaps)

Chemical & Pigment Co., St. Helena, Baltimore
E. I. du Pont de Nemours Co., Wilmington, Del.
Foote Mineral Co., 1609 Summer St., Phila.
Titanium Pigment Co., 111 Broadway, N. Y.
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.

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Hoberg Paper & Fibre Co., Green Bay, Wisc.
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Straubel Paper Co., Green Bay, Wis.
U. S. Envelope Co., Lititz, Pa.
Victoria Paper Mills Co., Fulton, N. Y.

TOILET PREPARATIONS (Private Label)

(see also Bath Salts, Shampoos, etc.)

Commercial Labs., Newark, N. Y. State
R. Gesell, Inc., 200 W. Houston St., N. Y.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Richards Sales Corp., Warren & Morris Sts., Jersey City, N. J.
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
Shores Co., Cedar Rapids, Ia.
John T. Stanley Co., 642 W. 30th St., N. Y.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

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Morton Mfg. Co., 5105 W. Lake St., Chicago
National Towel Bendon Ltd., 12 Stewart St., San Francisco
Sani-Gard Cover Co., 411 W. 5th St., Los Angeles

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Colgate-Palmolive-Peet Co., Jersey City, N. J.
Hewitt Soap Co., Dayton, O.
Los Angeles Soap Co., Los Angeles, Cal.
Natl. Oil Products Co., Harrison, N. J.
Procter & Gamble Co., Cincinnati
Geo. A. Schmidt Co., 236 W. North Ave., Chicago
Swift & Co., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
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TOILET SOAP MILLS (see SOAP MACHINERY)

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J. Eavenson & Sons, Del & Penn Sts., Camden, N. J.
Haskins Bros. & Co., Omaha
Hewitt Soap Co., Dayton, O.
Long Island Soap Co., 29 Bridgewater St., Brooklyn
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
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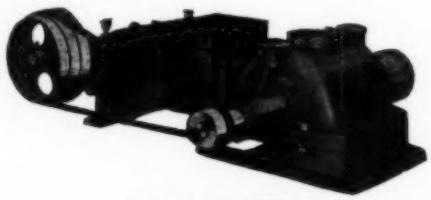

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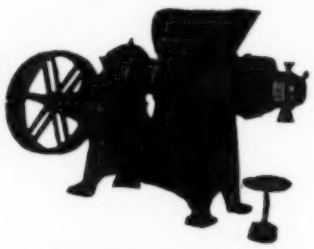

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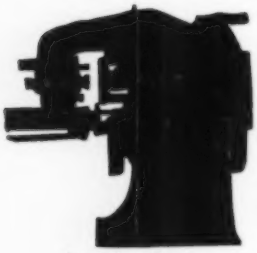

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American Doucil Co., 125 S. 3rd St., Philadelphia
Baum's Castorine Co., Rome, N. Y.
Blockson Chemical Co., Joliet, Ill.
Chemical Mfg. & Dist. Co., Easton, Pa.
Hubman Supply Co., 225 N. 4th St., Columbus, O.
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Calif.
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Mathieson Alkali Co., 60 E. 42nd St., N. Y.
Permutit Co., 330 W. 42nd St., N. Y.
Pittsburgh Plate Glass Co., Grant Bldg., Pittsburgh
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Cincinnati
Richards Sales Corp., Jersey City, N. J.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Shores Co., Cedar Rapids, Ia.
Solvay Sales Corp., 40 Rector St., N. Y.
Westvaco Chlorine Prods. Co., 405 Lexington Ave., N. Y.

WATER STILLS (Automatic)

International Filter Co., 325 W. 25th Pl., Chicago
F. J. Stokes Machine Co., Tabor Rd., Phila., Pa.

WAX APPLICATORS (see APPLICATORS)

WAX, FLOOR (see FLOOR WAX)

WAXES (Carnauba, Candelilla, Montan, etc., do not confuse with floor wax)

Allied Asphalt & Mineral Corp., 217 Broadway, N. Y.
American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
E. A. Bromund Co., 256 Broadway, N. Y.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
T. G. Cooper & Co., 47 N. 2nd St., Phila.
Cornelius Prods. Co., 432 4th Ave., N. Y.
Distributing & Trading Co., 444 Madison Ave., N. Y.
A. C. Drury & Co., 219 East North Water St., Chicago
Innis, Speiden & Co., 117 Liberty St., N. Y.
W. & A. Leaman, 17 State St., N. Y.
Lenape Trading Co., 233 Broadway, N. Y.
George H. Lincks, 155 John St., N. Y.
Muench-Kreuzer Candle Co., Syracuse, N. Y.
Neumann-Buslee & Wolfe, 224 W. Huron St., Chicago
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
R. J. Prentiss & Co., 80 John St., N. Y.
R. F. Revson Co., 144 W. 18th St., N. Y.
James H. Rhodes & Co., 157 W. Hubbard St., Chicago
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Frank B. Ross Co., 79 Wall St., N. Y.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
William H. Scheel, Inc., 38 Franklin St., Bklyn.
Smith-Weihman Co., 5 Moore St., N. Y.
Standard Oil Co., (Calif.), 225 Bush St., San Francisco
A. E. Starkie, 5461 W. Division St., Chicago
F. W. Steadman Co., 59 Pearl St., N. Y.
Strahl & Pitsch, 141 Front St., N. Y.
Strohmeyer & Arpe, 139 Franklin St., N. Y.
Twin City Shellac Co., 340 Flushing Ave., Brooklyn
Will & Baumer Candle Co., Syracuse, N. Y.

WAXES, Synthetic

Allied Asphalt & Mineral Corp., 217 Broadway, N. Y.
Atlas Powder Co., Wilmington, Del.
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
Cornelius Prods. Co., 432 4th Ave., N. Y.
E. I. du Pont de Nemours Co., Wilmington, Del.
Glyco Products Co., 230 King St., Brooklyn
National Oil Products Co., Harrison, N. J.
R. F. Revson Co., 144 W. 18th St., N. Y.
Sherwood Refining Co., Englewood, N. J.
F. W. Steadman Co., 59 Pearl St., N. Y.
Van Dyk & Co., 57 Wilkinson Ave., Jersey City, N. J.
General Dyestuffs Corp., 435 Hudson St., N. Y.

WEIGHING EQUIPMENT (Automatic)

J. L. Ferguson Co., Joliet, Ill.
B. F. Gump Co., 412 S. Clinton St., Chicago
S. Howes Co., Silver Creek, N. Y.
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Pneumatic Scale Corp., North Quincy, Mass.
Read Machy. Co., York, Pa.
F. J. Stokes Machine Co., Phila, Pa.
Stokes & Smith Co., 4915 Summerdale Ave., Phila.
Triangle Package Machinery Co., 906 N. Spaulding Ave., Chicago
Vol-U-Meter Co., 710 Ohio St., Buffalo, N. Y.
Weigh Right Automatic Scale Co., Joliet, Ill.

WETTING AGENTS (see also Detergents, Synthetic, and Sulfonated Oils)

American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
Atlantic Refining Co., 260 S. Broad St., Philadelphia
Carbide & Carbon Chemicals Corp., 30 E. 42nd St., N. Y.
E. I. du Pont de Nemours Co., Wilmington, Del.
Emulsol Corp., 59 E. Madison Ave., Chicago
General Dyestuff Corp., 435 Hudson St., N. Y.
Hercules Powder Co., Wilmington, Del.
Monsanto Chemical Co., St. Louis
National Aniline & Chem. Co., 40 Rector St., N. Y.
National Oil Products Co., Harrison, N. J.
Procter & Gamble Co., Cincinnati
Richards Sales Corp., Jersey City, N. J.
Rohm & Haas Co., 222 W. Washington St., Philadelphia
Jacques Wolfe & Co., Passaic, N. J.

WHALE OIL

(see also Brokers and Dealers)

F. A. Marsily & Co., 15 Whitehall St., N. Y.
Murray Oil Prods. Co., 21 West St., N. Y.
J. H. Redding Co., 17 Battery Pl., N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Arthur C. Trask Co., 4103 S. LaSalle St., Chicago
Welche, Holme & Clark, Inc., 563 Greenwich St., N. Y.
Wilbur-Ellis Co., 17 Battery Pl., N. Y.

WHALE OIL SOAPS

(see also Fish Oil Soaps)

James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Hockwald Chem. Co., 135 Mississippi St., San Francisco

WHALE OIL SOAPS (Contd.)

National Oil Products Co., Harrison, N. J.
National Soap Co., Box 1613, Tacoma, Wash.
Newell, Gutradt Co., 350 Fremont St., San Francisco
North Coast Chemical & Soap Works, Seattle, Wash.
Peck's Prods. Co., 5420 N. 2nd St., St. Louis
Procter & Gamble Co., Cincinnati
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Werner G. Smith Co., 2191 W. 110th St., Cleveland

WHITE MINERAL OILS

Atlantic Refining Co., 260 S. Broad St., Philadelphia
Pennsylvania Refining Co., Butler, Pa.
Petroleum Specialties, Inc., 570 Lexington Ave., N. Y.
H. H. Rosenthal Co., 25 E. 26th St., N. Y.
Sherwood Refining Co., Englewood, N. J.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
L. Sonneborn Sons, 88 Lexington Ave., N. Y.
Stanco, Inc., 2 Park Ave., N. Y.
Standard Oil Co., (Calif.), 225 Bush St., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago

WHITING (see TALC)

WINDSHIELD CLEANERS, (see Glass and Windshield Cleaners)

WOOD FLOUR

Becker Moore & Co., N. Tonawanda, N. Y.
Innis Speiden & Co., 117 Liberty St., N. Y.
D. H. Litter Co., 242 W. 55th St., N. Y.
Frank Miller & Sons, 2250 W. 58th St., Chicago
Wishnick-Tumpeer, Inc., 295 Madison Ave., N. Y.
Wood Flour, Inc., Winchester, N. H.

WOOL GREASE (see LANOLIN)

WRAPPING MACHINERY

Consolidated Products Co., 15 Park Row, N. Y. (Used)
J. L. Ferguson Co., Joliet, Ill.
First Machy. Corp., 819 E. 9th St., N. Y. (Used)
Johnson Automatic Sealer Co., Battle Creek, Mich.
J. M. Lehmann Co., 250 West Broadway, N. Y.
Miller Wrapping & Sealing Mach. Co., 16 S. Clinton St., Chicago
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Package Machinery Co., Springfield, Mass.
Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago
Stein Equipment Corp., 426 Broome St., N. Y. (Used)
Stokes & Smith Co., 4915 Summerdale Ave., Phila.
Aurelio Tanzi Engineering Co., 430 Jefferson St., Bklyn.

ZINC NAPHTHENATE

Baker & Collinson, Detroit
General Petroleum Corp of Calif., 108 W. 2nd St., Los Angeles
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Nuodex Products Co., 312 Division St., Elizabeth, N. J.

ZINC OXIDE

American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, N. Y.
Anaconda Sales Co., E. Chicago, Ind.
J. T. Baker Chem. Co., Phillipsburg, N. J.
Chas. B. Chrystal Co., 16 Hudson St., N. Y.
A. C. Drury & Co., 219 East North Water St., Chicago
E. I. du Pont de Nemours Co., Wilmington, Del.
Eagle-Picher Lead Co., 134 N. LaSalle St., Chicago
Harshaw Chem. Co., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chemical Works, St. Louis, Mo.
Merck & Co., Rahway, N. J.
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Orbis Products Corp., 215 Pearl St., N. Y.
Rohm & Haas Co., 222 W. Washington Sq., Phila.
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Western Zinc Oxide Co., Leadville, Col.

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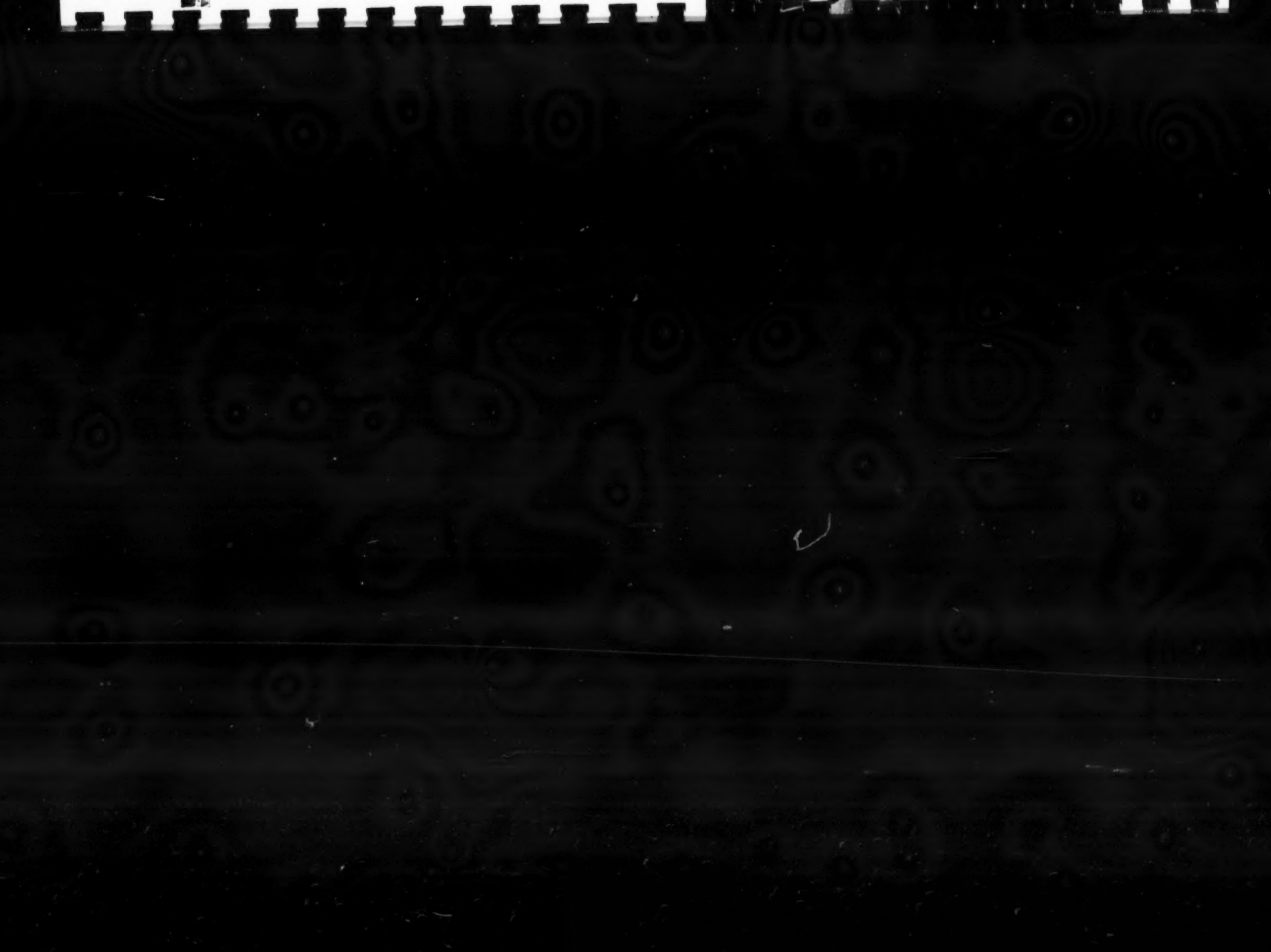

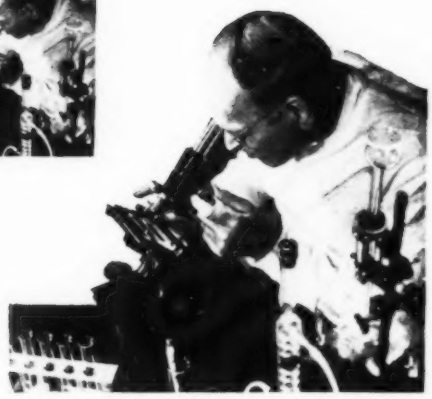

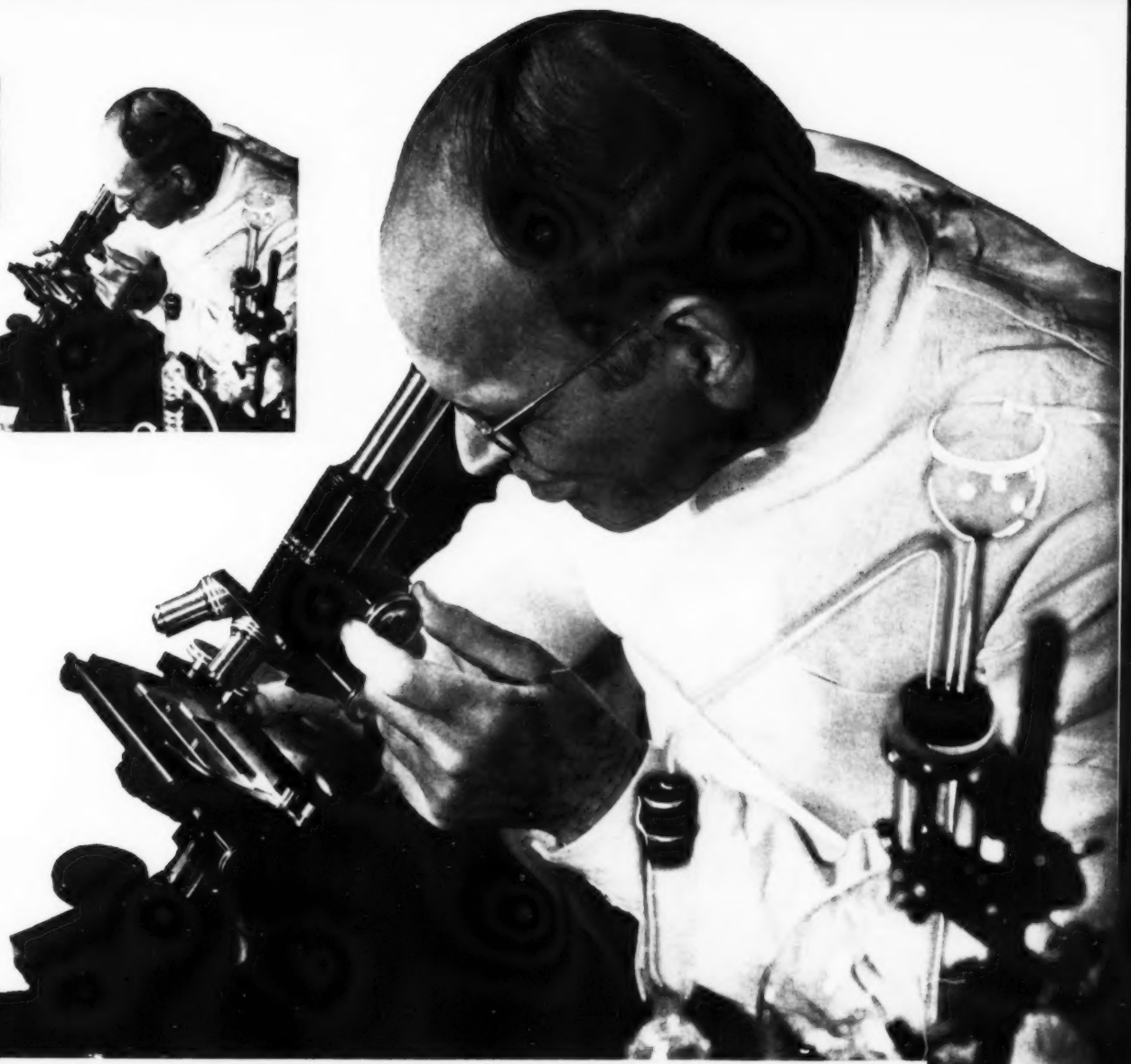

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Geranium Synthetic
Vanillin
Terpenyl Acetate
Linalool
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Coumarin
Heliotropin

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Almond Bouquet
Chypre Bouquet
Cedarome
Carnation
Jasmin
Lilac
Lavender
Orange Blossom
Verbena
Orienidor
Rose
Trefle
Violet

WATER SOLUBLE PERFUMES

Cedar
Chypre
Gardenia
Lavender
Pine
Rose

RESINOIDS

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1942 Soap Fat and Oil Use

CONSUMPTION of fats and oils by the soap industry totaled approximately 1,870,556,000 pounds during 1942, according to figures released early in April, 1943, in a preliminary report by the Bureau of the Census on factory consumption of animal and vegetable fats and oils. This represented a sharp drop from totals for the previous year, when soap makers' consumption of fats and oils totaled 2,143,857,000 pounds, but as compared with averages for previous years the total was quite imposing. The decline from 1942 figures is attributable to lower consumption during the second half of the year. During the first six months of 1942 soap makers continued to use oils and fats at the 1941 rate, total consumption for the period being 1,012,249,000 pounds, but during the third and fourth quarters soap makers' use of fats and oils dropped off to 431,162,000 pounds and 427,145,000 pounds respectively.

Incidentally, the above figures are for primary animal and vegetable fats and oils, only, and do not reflect consumption of foots and fatty acids.

The most striking change in the oil and fat picture during 1942, so far as the soap maker was concerned, was the sharp drop in the availability of coconut oil. Only 140,487,000 pounds of coconut oil went to the soap kettle in 1942, as compared with 484,124,000 pounds the previous year, and an average of approximately 340,000,000 pounds a year over the most recent ten-year period. That this shortage of coconut oil is being felt with increasing effect by the industry is indicated by the fact that consumption during the second half of the year was only around 40,000,000 pounds as against approximately 100,000,000 pounds during the first six months of 1942.

In the face of this shortage of one of the most important soap making oils, there was an increase in use of both tallow and grease by the soap industry during 1942. Consumption of tallow advanced to 1,188,923,000 pounds during 1942 from the previous record level of 1,057,303,000 pounds established in 1941. Consumption of grease jumped to 338,975,000 pounds from the 1941 figure of 310,487,000 pounds.

Babassu oil also continued to decline in importance as an ingredient in American soaps, its use falling in 1942 to 19,105,000 pounds from the previous year's total of 29,753,000 pounds. Some of the slack from this and other losses was taken up by the use of increased quantities of domestic soyabean oil and whale oil. Soyabean oil consumption advanced to 31,510,000 pounds from the 1941 figure of 24,737,000 pounds, while 21,989,000 pounds of whale oil went to the soap kettle in 1942 as against only 6,889,000 pounds during the previous year. Use of fish oils dropped in 1942 to 50,413,000 pounds, comparing with the 1941 total of 69,423,000 pounds.

Another important loss to the soap kettle during 1942 was a substantial part of the stocks of palm oil that formerly went into soap production. As compared with consumption of 129,871,000 pounds of palm oil by soap makers in 1941, use during 1942 dropped off to only 55,865,000 pounds. Palm kernel oil in recent years has practically dropped out of the picture as a soap oil, and again this year use in soaps was inconsequential. A further decline was registered also in the use of olive oil foots. As compared with 10,029,000 pounds in 1941, only 4,823,000 pounds of olive foots reached the soap kettle in 1942.

Fat and Oil Consumption
By The American Soap Industry 1935-1942

Fats and Oils	1935 (1000 lb.)	1936 (1000 lb.)	1937 (1000 lb.)	1938 (1000 lb.)	1939 (1000 lb.)	1940 (1000 lb.)	1941 (1000 lb.)	1942 (1000 lb.)
Tallow	663,002	660,020	613,509	702,267	785,041	786,456	1,057,303	1,188,923
Coconut oil ..	229,711	307,376	252,241	342,982	388,912	396,857	484,124	140,487
Palm oil	87,311	78,453	141,358	91,642	102,146	84,934	129,871	55,865
Grease	98,086	98,714	94,247	96,356	120,856	256,886	310,487	338,975
Fish oils	109,970	128,044	123,879	79,874	114,961	88,661	69,423	50,413
Whale oils ...	28,440	32,603	65,130	66,080	51,522	19,250	6,889	21,989
Palm-kernel oil	37,173	26,443	111,514	29,498	3,657	197	1,113	969
Olive foots ...	31,507	23,965	17,984	15,013	19,068	14,958	10,029	4,823
Soybean oil...	2,549	5,023	10,274	10,897	11,177	17,612	24,737	31,510
Babassu oil ..	.....	8,993	14,308	8,289	37,633	41,221	29,753	19,105
Totals	**1,312,690**	**1,394,538**	**1,475,756**	**1,468,535**	**1,653,704**	**1,722,634**	**2,143,857**	**1,870,556**

Considerable quantities of oils and fats shown as being used in refining and subjected to sulphonation have also been included in the totals shown for the various classes of products. For example, the crude cottonseed oil shown as used in refining is reported also as refined cottonseed oil used in the manufacture of shortening, cooking and salad oils, etc. There is thus some duplication in the reports and a summation of the "totals" would give a deceptively high figure for total factory consumption of fats and oils during the period. Oils and fats shown as used in fat splitting do not include those oils and fats used for fat splitting for the production of soap during a later period.

FACTORY CONSUMPTION OF PRIMARY ANIMAL AND VEGETABLE FATS AND OILS, BY CLASSES OF PRODUCTS, DURING THE FOURTH QUARTER OF 1942
(Quantities in thousands of pounds) Preliminary Report

Kind of Fat or Oil	Total for October, November, and December 1942	Used in Refining	Fat Splitting	Subjected to sulphonation	Shortening	Cooking and salad oils	Salad Dressing, Mayonnaise and other salad products	Oleomargarine	Other edible products	Soap	Paint and Varnish	Linoleum and Oilcloth	Printing Inks	Lubricants, cutting oils, and greases	Other miscl. products
TOTAL		861,299	39,359	9,496	320,086	130,490	53,742	103,168	14,956	427,145	109,590	17,909	3,681	19,253	90,668
VEGETABLE OILS:															
Cottonseed, crude	569,743	569,166	....	42	....	....	....	....	....	299	....	....	1	148	87
Cottonseed, refined	392,221	....	....	930	184,079	115,857	27,157	55,773	7,217	78	227	....	13	174	716
Peanut, crude or virgin	27,188	27,100	....	22	....	....	....	....	....	54	5	....	....	1	6
Peanut, refined	11,355	....	....	375	6,236	2,004	....	126	1,646	48	....	....	....	113	807
Coconut, crude	23,140	10,165	258	1	....	....	....	....	....	12,525	....	....	....	1	190
Coconut, refined	8,310	....	150	6	17	....	....	....	32	4,277	2	....	....	....	3,826
Corn, crude	62,057	60,941	....	265	....	....	....	....	....	500	7	....	....	4	340
Corn, refined	25,826	....	....	30	294	1,604	21,890	446	1,135	127	11	....	1	58	230
Soybean, crude	197,532	190,879	180	83	....	....	....	....	....	2 181	954	56	4	50	3,145
Soybean, refined	163,361	....	....	180	91,882	10,584	4,695	44,223	2,951	2,504	4,466	44	25	89	1,718
Olive, edible	398	....	....	....	....	264	....	....	100	2	....	....	....	....	32
Olive, inedible	144	....	....	11	....	....	....	....	....	84	....	....	....	26	23
Olive, sulphur oil or olive foots	1,343	....	....	3	....	....	....	....	....	1,332	....	....	1	....	7
Palm kernel, crude	[1]	....	....	....	....	....	....	....	....	[1]	....	....	....	....	[1]
Palm kernel, refined	85	....	....	....	....	....	....	....	23	46	....	....	....	11	5
Palm, crude	9,323	107	....	....	....	....	....	....	....	4,669	....	....	....	2	4,545
Palm, refined	2,003	....	....	4	1,238	....	....	....	....	749	....	....	....	6	6
Babassu, crude	2,904	662	....	....	....	....	....	....	....	2,242	....	....	....	....	....
Babassu, refined	745	....	59	....	....	....	....	....	....	684	....	....	....	2	....
Rapeseed	4,018	....	....	....	....	....	....	....	....	....	14	....	....	3,318	686
Linseed	125,593	....	259	3	....	....	....	....	....	995	89,702	17,195	3,343	158	13,938
China wood or tung	2,064	....	....	....	....	....	....	....	....	....	1,837	....	3	11	213
Perilla	443	....	....	....	....	....	....	....	....	....	410	....	22	....	11
Castor No. 1, crude	9,735	812	....	540	....	....	....	....	....	81	942	26	9	87	7,238
Castor No. 3, crude	5,558	....	1,040	1,675	....	....	....	....	....	26	194	1	32	44	2,546
Castor, dehydrated	5,400	....	....	....	....	....	....	....	....	....	4,759	120	13	7	501
Castor, sulphonated	1,867	....	....	....	....	....	....	....	....	263	130	....	6	5	1,463
Sesame	29	....	....	....	2	16	....	....	....	8	....	....	....	....	3
Oiticica	1,326	....	....	....	....	....	....	....	....	....	940	....	73	....	313
Other vegetable	7,188	....	....	353	5,665	161	....	....	60	724	12	....	1	....	212
ANIMAL FATS:															
Lard, rendered (include neutral lard and rendered pork fat)	16,721	....	....	....	13,273	....	....	2,494	273	12	....	....	2	39	628
Tallow, edible	18,142	....	....	2	16,167	....	....	106	1,519	98	....	....	1	54	195
Tallow, inedible	323,110	....	25,050	1,444	....	....	....	....	....	286,214	2	....	13	6,544	3,843
Neat's-foot oil	2,007	5	....	485	....	....	....	....	....	1	5	....	....	201	1,310
FISH AND MARINE MAMMAL OILS:															
Cod oil	2,489	....	....	445	....	....	....	....	....	....	....	....	....	13	2,031
Cod-liver oil	1,283	....	....	....	....	....	....	....	....	....	....	....	....	....	1,283
Other liver oil	749	....	....	19	....	....	....	....	....	....	....	....	....	....	730
Marine mammal oils	3,645	....	....	313	....	....	....	....	....	1,863	....	....	....	1,290	179
Fish oil	34,415	33	451	1,770	1,233	....	....	....	....	16,813	4,930	467	21	1,362	7,335
GREASES:															
Greases, other than wool	132,918	....	11,912	207	....	....	....	....	....	87,646	31	....	60	4,076	28,986
Wool grease	4,464	1,429	....	288	....	....	....	....	....	....	10	....	37	1,359	1,341

[1] Included in "other vegetable."

Soap Sales Statistics

SOAP sales reached a new peak in 1942, according to figures tabulated by the Association of American Soap and Glycerine Producers. The dollar value for the year 1942 was $364,222,483, which was 11.7 per cent above the figure for 1941, itself a record year. In spite of this rather substantial advance in dollar value of soap industry sales, the 1942 figures represented a decline from 1941 on the basis of pounds of soap sold. Total pounds of other than liquid soap sold by reporting companies during 1942 amounted to 2,938,529,805, which compared with a figure of 3,147,991,414 lbs. for 1941. Liquid soaps totaling 2,952,507 gallons were sold during 1942, as against 3,549,951 gallons during 1941. The value of 1942 liquid soap sales was $2,996,880 as against $2,577,315 for 1941.

To get a more accurate picture of figures of the entire industry, the association figures, which are reported quarterly by approximately 75 members, would have to be increased by from 10 to 20 per cent. The association estimates that its figures represent approximately 90 per cent of the domestic industry on a volume basis, although private estimates indicate that a figure of 80 per cent might be closer to the actual percentage of the entire industry which they represent.

Sales for the first quarter of 1942 reached the highest peak in the history of the industry. Dollar value was $106,683,642 as compared with a quarterly average of approximately sixty million dollars for the 1935-1939 period. Sales in the second 1942 quarter registered the sharp drop that might have been expected, falling to a figure of $75,654,989,—approximately fifteen million dollars under the corresponding 1941 quarter. Figures for the third quarter of $94,057,659, and for the fourth quarter of $85,164,277, showed a substantial recovery, and for each three-month period were well above comparable quarterly totals for 1941.

When viewed from the perspective of the past six or seven years, the increase in 1942 sales totals is even more impressive. Since 1935 there has been an increase in soap sales in every year except 1941. Over the span of the period 1935-1942, the net result has been that soap sales have increased by approximately 80 per cent. Over the past two years the sharp increase in the demand for by-product glycerine for war uses has been a powerful stimulus behind increased soap production. This need, coupled with the sharply increased demand for soap by the army and navy, the war industries, our allies abroad, and a busier and longer pocket-booked public. combine to explain the sharp increase.

SOAP SALES 1935-1942

(Dollars)

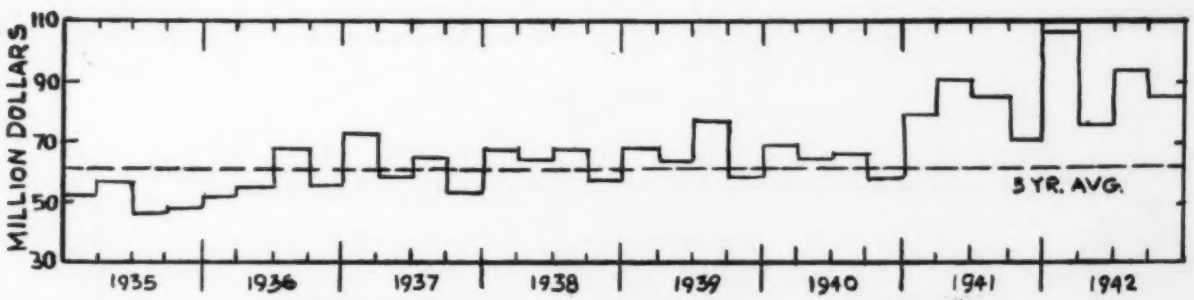
	1935	1936	1937	1938
First Quarter	$51,669,187	$51,287,861	$72,597,194	$67,126,708
Second Quarter	56,446,698	54,375,873	58,348,987	64,323,947
Third Quarter	46,118,132	67,694,004	65,136,966	67,888,213
Fourth Quarter	47,877,732	55,313,259	52,594,824	57,385,034
Total	$202,111,749	$228,670,997	$248,677,971	$256,723,902

	1939	1940	1941	1942
First Quarter	$68,338,484	$69,143,392	$79,286,950	$107,389,936
Second Quarter	64,731,687	65,433,673	90,624,470	76,304,412
Third Quarter	77,792,913	66,187,491	85,915,178	94,672,287
Fourth Quarter	59,064,959	58,481,653	70,306,672	85,855,848
Total	$269,928,043	$259,246,209	$326,130,270	$364,222,483

SALES IN POUNDS

	1939	1940	1941	1942
First Quarter	695,927,850	682,872,171	819,323,729	896,023,915
Second Quarter	649,682,781	644,881,601	890,229,610	601,824,490
Third Quarter	804,481,806	689,687,848	803,867,642	744,883,824
Fourth Quarter	606,710,854	629,290,891	625,281,836	688,221,782
Total	2,756,803,291	2,646,732,511	3,138,702,817	2,930,954,011

Above figures include only comparable totals of reporting members of Assn. American Soap & Glycerine Producers



Bobrick Sop-o-zon Dispensers

Liquid *Powder*

Gone for the Duration But— Not Forgotten!

GONE, because—all our precision equipment is occupied day and night producing hydraulic valves for Bombers.

NOT FORGOTTEN, because—we have a group of new dispensers now in the blueprint stage—revolutionary in design and performance—available we hope, soon after **VICTORY DAY.**

As always—Bobrick, the oldest and largest manufacturer of quality soap dispensing equipment will lead the field!

Bobrick Manufacturing Corporation
Los Angeles California
"Our 37th Year"

Soap Buying Habits

A study of soap preferences in the Milwaukee market for 1943

SOAP buying habits in the Milwaukee market are checked annually by the *Milwaukee Journal*. Reflecting as they do the buying policies of a representative cross-section of the American public, they give some idea of the national urban market for soaps and allied products. The following figures, taken from the 1943 survey, give the percentage of families in the district using each product, and the brands preferred by the largest percentage of Milwaukee residents.

Toilet Soap for Hands and Face

used by 99.7% of reporting families.
Leading sellers:

"Lux"	26.4%
"Sweetheart"	20.9%
"Palmolive"	14.8%

Toilet Soap for Bath

used by 99.7% of reporting families.
Leading sellers:

"Lifebuoy"	24.0%
"Ivory"	19.7%
"Lux"	17.1%

Granulated Soap and Soap Beads

used by 85.1% of reporting families.
Leading sellers:

"Rinso"	49.9%
"Oxydol"	49.9%
"Duz"	35.9%

Tooth Paste

used by 58.2% of reporting families.
Leading sellers:

"Pepsodent"	24.7%
"Colgate's"	24.7%
"Ipana"	16.0%

Shaving Cream

used by 36.5% of reporting families, 86.9% of all buyers reported they preferred tubes to jars. Leading sellers:

"Palmolive"	37.2%
"Lifebuoy"	16.3%
"Williams"	10.6%

Tooth Powder

used by 56.6% of reporting families.
Leading sellers:

"Dr. Lyon's"	47.5%
"Pepsodent"	15.3%
"Colgate's"	8.0%

Brushless Shaving Cream

used by 22.7% of reporting families.
Leading sellers:

"Burma Shave"	18.8%
"Palmolive"	16.9%
"Barbasol"	15.9%

Toilet Bowl Cleansers

used by 61.0% of reporting families.
Leading sellers:

"Sani-Flush"	47.9%
"Bowlene"	43.7%
"Vanish"	6.2%

Liquid Shampoos

used by 60.4% of reporting families.
Leading sellers:

"Drene"	28.9%
"Fitch's"	21.3%
"Watkins"	9.9%

Package Soap Flakes

used by 82.1% of reporting families.
Leading sellers:

"Lux"	35.0%
"Ivory"	27.6%
"Hanser's"	23.7%

Scouring Cleansers

used by 96.4% of reporting families.
Leading sellers:

"Kitchen Klenzer"	32.3%
"Old Dutch"	23.1%
"Bab-O"	10.6%

Soap Crystals, Water Softeners

used by 37.3% of reporting families.
Leading sellers:

"Climalene"	62.9%
"Melo"	11.3%
"No Name"	5.5%

White Laundry Soap

used by 66.5% of reporting families.
Leading sellers:

"P. & G."	62.7%
"Crystal White"	20.3%
"Ivory"	16.8%

Brown Laundry Soap

used by 58.2% of reporting families.
Leading sellers:

"Fels Naptha"	86.1%
"O. K."	8.2%
"American Family"	5.8%

Liquid Dentifrices

used by 17.0% of reporting families.
Leading sellers:

"Teel"	79.6%
"Craig-Martin"	7.7%
"Pepsodent"	6.2%

Aromatics for soap

BY Albert Verley AND COMPANY

232 E. OHIO ST., CHICAGO • 114 E. 25th ST., NEW YORK • MEFFORD CHEMICAL CO., LOS ANGELES

Now "made in U.S.A."— freeing you from dependence on foreign sources

Aliphatic Aldehydes

C-8 (Octyle) 100%
C-10 (Decyl) 100%
C-11 (Undecylenique) 100%
C-12 (Laurique) 100%
C-12 (Methylnonylacetique) 100%
C-14 (Peche)

Formerly these fine chemicals — with their welcome addition to the distinction and sales appeal of your perfume compositions—were available only from European sources, at prices beyond the reach of the soapmaker. • Today they are manufactured 100% in our Chicago laboratories, at practical prices, and the perfume industry is using them widely with notable success.

Aldehyde Gras Superieur

A powerful floral character particularly of interest for Violet or Lilac top-note.

Geranium Synthetic

. . . . . also Lavender Synthetic, Bergamot Synthetic.

Both Rose Geranium Bourbon and Rose Geranium African have been reproduced by the House of Verley with amazing fidelity to nature — thus enabling you to save money while maintaining your reputation for quality. Equal progress has been made in the synthesis of Lavender and Bergamot.

Write for working samples and prices—which, in view of the quantities required, are well within the soapmaker's means.

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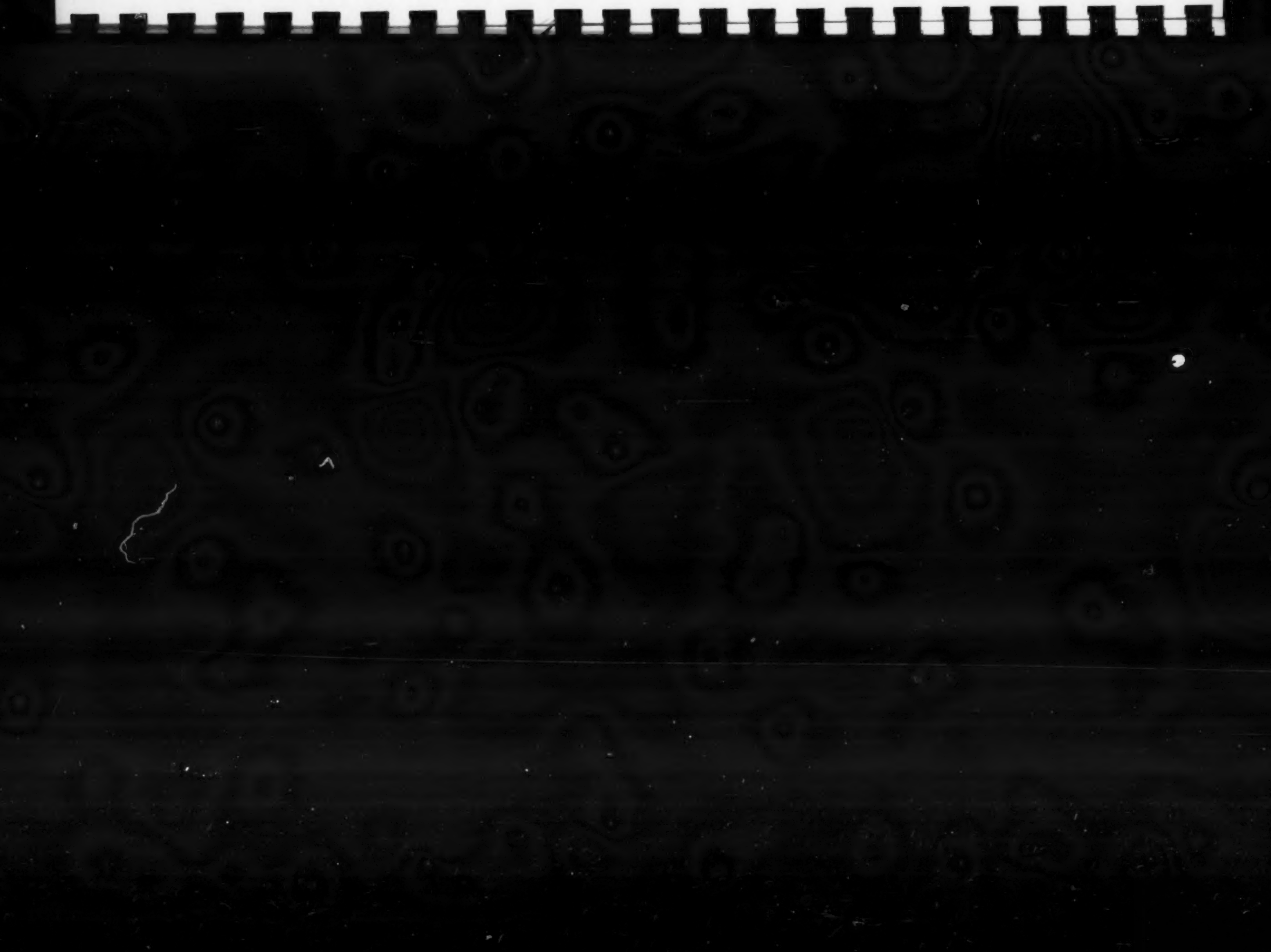

Government Orders

Orders of the FDA and OPA covering oil and fat use, recovery and sale of glycerine and quality and size of soap bars and packages

OIL AND FAT USE
FDO-42

CHAPTER XI—FOOD DISTRIBUTION ADMINISTRATION

(Food Distribution Order No. 42, Fats and Oils)

Part 1460—Fats and Oils

RESTRICTIONS ON USE OF FATS AND OILS

Pursuant to authority vested in me by Executive Order No. 9280, dated December 5, 1942, and in order to assure an adequate supply and efficient distribution of fats and oils to meet war and essential civilian needs, IT IS HEREBY ORDERED as follows:

§ 1460.1 Use of Fats and Oils.

(a) *Definitions.* When used in this order, unless otherwise distinctly expressed or manifestly incompatible with the intent thereof:

(1) The term "fats and oils" means all the raw, crude, refined, and pressed fats and oils, whether vegetable, animal, fish, or other marine animal, their by-products and derivatives, including grease (lard) oil,, sulfonated and similarly processed fats and oils, fatty acids, and lard and rendered pork fat, but not including cocoa butter, butter, wool greases, essential oils, tall oil mineral oils, and vitamin-bearing oils derived from fish or other marine animal livers or viscera.

(2) The term "person" means any individual, partnership, corporation, association, or other business entity.

(3) The term "manufacturer" means any person who uses any fats or oils in the manufacture of any finished product, and shall include all other persons directly controlling or controlled by such person and all persons under direct or indirect common control with such person. The term shall not include any crusher, renderer, refiner, or other processor except as and to the extent that his operations result in the production of a finished product, and shall also not include any person who uses fats and oils in the home preparation of food for household consumption. Blending alone shall not constitute a person a manufacturer.

(4) The "inventory" of a manufacturer at any time shall include all fats and oils held or controlled by him and all fats and oils purchased by him for future delivery.

(5) The term "finished product" means any product of a manufacturer produced for sale as his finished product and carried on his books as his finished product. Other than for the purpose of paragraph (d) hereof, "finished product" shall not include:

(i) grease (lard) oil; (ii) sulphonated or similarly processed fat or oil; (iii) fatty acids; (iv) lard or rendered pork fat; (v) any fat or oil product intended for sale to another manufacturer for further processing in the manufacture of, or for inclusion in, any product (excepting a product falling within paragraph (a) (5) (v) hereof; (vi) any edible product of which a fat or oil is not the principal ingredient; (vii) any edible product produced by any hotel or restaurant for consumption on the premises (viii) any medicinal preparation including vitamin preparations, other than medicated soap; (ix) olive oil; or (x) poultry fat.

(6) The term "crusher" means any person who presses, expels, or extracts oils from any seed, bean, nut, or corn or other oil-bearing materials.

(7) The term "principal ingredient" as used in paragraph (a) (5) (vi) hereof means the largest single ingredient by weight, subject to the qualification that mayonnaise and salad dressing are to be considered products of which a fat or oil is not the principal ingredient regardless of the fat or oil composition thereof in the particular case.

(8) The term "soap" means the product commonly known by that term, including all types of shaving soap and cream, excluding, however, soap used for non-detergent purposes (including the processing of textiles).

(9) The term "base period use" means the average use during the corresponding calendar quarter of the years 1940 and 1941.

(10) The term "Director" means the Director of Food Distribution, United States Department of Agriculture, or any employee of the United States Department of Agriculture designated by such Director.

(b) *Restrictions on manufacture.*

(1) No manufacturer, except as provided in paragraph (b) (5) hereof, shall in any calendar quarter use or consume any fat or oil in any class of use listed in Schedule A annexed hereto in a quantity in excess of the percentage so specified in such Schedule A of his average quarterly use or consumption of fats and oils in such class of use during the corresponding calendar quarters of the two years 1940 and 1941.

(2) If any manufacturer does not, in any calendar quarter, use or consume the quantity of fat or oil permitted by paragraph (b) (1) hereof, the unused part of his quota for such quarter shall, for the purposes of such paragraph (b) (1) be carried forward and added to his permitted quota for the succeeding quarter: *Provided, however,* That any unused part of his permitted quota for any prior quarter shall not be carried forward beyond June 30, 1943, and beyond the 30th day of June of each year thereafter.

(3) For the purpose of determining the quantity of raw "foots" which may be used or consumed, use or consumption shall be calculated on the basis of total fatty acid content.

(4) The restrictions on the use or consumption of fats and oils imposed hereby are imposed with respect to the use or consumption of fats and oils in the aggregate, and such restrictions are not to be construed to limit a manufacturer to the use or consumption of the same fat or oil used or consumed by him in the base period.

(5) Nothing in paragraph (b) (1) hereof shall restrict:

(i) The use or consumption of fats and oils in any calendar quarter by any manufacturer whose aggregate use or consumption of fats and oils in such period is less than 6,000 lbs.

(ii) The use of fats and oils in the manufacture of any edible product or soap delivered or to be delivered to—

(a) the Army of the United States (including post exchanges outside the continental United States);

(b) The Navy of the United States (including the Coast Guard and Marine Corps, and including ships' service stores outside the continental United States);

(c) the War Shipping Administration;

(d) the Panama Railroad Company;

(e) Any agency of the United States for delivery to or for the account of the government of a foreign country pursuant to the Act of March 11, 1941, entitled "An Act to Promote the Defense of the United States" (Lend-Lease Act);

(f) the Food Distribution Admnistration for export, or for shipment to any territory or possession of the United States;

(g) any wholesaler or jobber for delivery to any of the persons or agencies named in this paragraph (b) (5) (ii) hereof;

(h) any person, feeding, under contract (directly or indirectly), personnel of the Army, Navy, Marine Corps, and Coast Guard, for use in the preparation of meals for such personnel;

(i) any person using an edible product in the perparation of meals to be served on vessels operated under the War Shipping Administration; or

(j) another manufacturer for use in the manufacture of any edible product to be delivered to any of the persons or agencies named in this paragraph (b) (5) (ii) hereof.

Deliveries to the persons named in paraghaphs (b) (5) (ii) (g), (h), (i), and (j) hereof shall be non-quota only if supported by a certificate issued to the person having the prime contract with the agencies named in paragraphs (b) (5) (ii) (a), (b), (c), (d), (e), and (f) hereof. This certificate shall be issued by the Quartermaster General of the Army, the Chief of the Bureau of Supplies and Accounts or the Chief of the Bureau of Naval Personnel of the Navy, the Commandant of the United States Coast Guard, the Quartermaster of the United States Marines, the Administrator of the War Shipping Administration, the Vice President of the Panama Railroad Company, the Director, or the duly authorized representative of any of them. It shall specify the name of the manufacturer supplying such fats and oils or soap, and shall state that the final products are for direct Army, Navy, Coast Guard, or Marine Corps issue or for sale in post exchanges or ships' service stores outside the continental United States, for contract feeding of Army, Navy, Coast Guard, or Marine Corps personnel, for consumption on ships operated under the War Shipping Administration, for consumption in the Panama Canal Zone, for export or shipment to any territory or possession of the United States, or for delivery pursuant to such Lend-Lease Act; and that this delivery or manufacture of such products will require a stated quantity of fats and oils or soap. The prime contractor shall furnish copies of such certificate, certified by him to be true and correct, to the persons from whom he obtains such products, and such certified copies shall be transmitted through trade channels to the manufacturer named thereon.

(iii) The use of fats and oils in the manufacture of all protective coatings, coated fabrics, linoleum, oilcloth, and felt base floor coverings, delivered or to be delivered to, or used on or incorporated in material and equipment delivered or to be delivered to, the Army, Navy, Marine Corps, or Coast Guard of the United States, to the United States Maritime Commission, or to the United States War Shipping Administration, or delivered pursuant to the Act of March 11, 1941 (Lend-Lease Act), and for the military, naval, and maritime requirements of the United Nations: *Provided, however*, That any manufacturer claiming exemption under this paragraph (b) (5) (iii) hereof shall file War Production Board Form PD-600, or such other form or forms that may be prescribed by the Director, and receive authorization for such exemption from the Director. Forms may be obtained at local field offices of the War Production Board or the Food Administration of the United States Department of Agriculture. Five copies shall be prepared, four of which shall be forwarded to the Director of Food Distribution, United States Department of Agriculture, Washington, D. C., Ref.: FD 42; the fifth to be retained in the manufacturer's files. For the purpose of this order, if War Production Board Form PD-600 is used, it shall be completed in the manner prescribed therein, subject to the following special instructions:

(a) Under the heading Table 1, change to "Application for exemption" instead of "Application for delivery and/or use required for your next month's operations."

(b) In the heading, under "Name of chemical," specify linseed oil, sardine oil, or other kind of fatty oil or fatty acid required; under "WPB order No." specify FD 42; under "Name of company," state name; under "mailing address," state mailing address; under "Delivery destination," leave blank; under "Supplier with whom this order is placed," leave blank; under "Shipping point," leave blank; under "Unit of measure," state pounds.

(c) Under column 1, specify grade required, for example: boiled linseed oil, soyabean oil, herring oil, fatty acid, dehydrated castor oil.

(d) Under column 2, specify the quantity for each kind or grade of fatty oil required and the end use for which the finished coating or material is to be used.

(e) Under column 3, specify paint, varnish, lacquer, enamel, oil cloth, synthetic resin (specify type).

(f) Under column 4, specify ultimate use of product (for example, airplane, warship, rifle, merchant-ship, anti-aircraft gun, military trucks).

(g) Under Column 9, specify contract number and award date.

(h) Under column 10, specify procurement agency, such as Signal Corps, United States Army, Signal Corps, United States Marine Corps, Naval Bureau of Ordnance, Quartermaster General of the Army, Food Distribution Administration.

(i) In table 2 under column 11, list each grade of each type of fatty oil or fatty acid.

(j) Column 13, fill in.

(k) Column 14, show the quantity of each grade for which exemption is claimed.

(l) Column 15, show quantity of each grade on hand at the end of the month preceding date of filing.

(m) Columns 15-a, 15-b, 15-c, leave blank.

(n) Column 16, state quantity of each grade used applying against your quota.

(o) In table 3, under column 17, each applicant on his first request for exemption shall state his allowable quota on the basis of 70 percent of the base period use for the first calendar quarter of 1943, and the allowable quota for the second quarter of 1943 (April 1 to June 30) on the basis of an allowed quota of 50 percent of the base period use.

(iv) The use of fats and oils in the manufacture of products to be exported (a) to the Dominion of Canada where such Dominion has granted a license for the import of such products, or (b) to any other country pursuant to any export license issued by the Board of Economics Warfare.

(6) For the purposes of determining a manufacturer's permissible use or consumption under paragraph (b) (1) hereof there shall be excluded from the calendar quarter during which use or consumption is hereby limited, any fat or oil used in the manufacture of the products referred to in paragraph (b) (5) (ii), (iii), and (iv) hereof, and there shall be excluded from the base period use any fat or oil used by such manufacturer in such base period in the manufacture of any product delivered by him to the Army or Navy of the United States or delivered by him as a prime contractor pursuant to the Lend-Lease Act, or exported to the Dominion of Canada or to any other

country, or shipped to any territory or possession of the United States except Hawaii, either directly or through wholesalers or jobbers.

(7) A person who acquires all the manufacturing facilities of another person in a particular class of use shall thereby become entitled to the quota of such other person in such class of use, whether or not he continues to operate such facilities in whole or in part: *Provided, however,* That he shall within 30 days following such acquisition inform the Director of the facilities acquired, their location, whether or not operation will be continued in the same or another location, and the amount of quota which he claims to have acquired in each class of use.

(8) Fats and oils processed by a person pursuant to toll agreement shall be chargeable, not to the quota of the processor, but to the quota of the owner of such fats and oils: *Provided, however,* That title to the product shall remain in the hands of the owner of the fats and oils and that such owner shall market, invoice, and collect for such product through his own organization.

(9) Each manufacturer of soap may, in any calendar quarter, substitute, in whole or in part, for the fats and oils (other than foots made from domestic vegetable oils or the fatty acids made from such foots) which he would be entitled to use under Schedule A in such manufacture, foots made from domestic vegetable oils or the fatty acids made from such foots. The quantity of such foots or their fatty acids which may be used or consumed shall be 100 per cent of the base period use of fats and oils.

(c) *Restrictions on deliveries of linseed oil.* (1) No person selling linseed oil (whether crushed or processed by him or purchased for resale) shall deliver in the aggregate to persons other than manufacturers during any calendar quarter more linseed oil (whether raw or processed) than 50 per cent of the average quarterly amount of linseed oil so delivered by him during the corresponding calendar quarters of the two years, 1940 and 1941.

(2) In reducing deliveries pursuant to paragraph (c) (1) hereof, no person shall make discriminatory cuts as between customers, whether new or old.

(3) This order shall not restrict the delivery by any person of linseed oil to the Army, Navy, Marine Corps, or Coast Guard of the United States, to the United States Maritime Commission, to pursuant to the Act of March 11, 1941 (Lend-Lease Act), and any amount so delivered by him shall be excluded both from the base period use on which his quota is based and from the period or quarter during which future deliveries are hereby limited.

(d) *Restrictions on processing and inventories.* (1) No person shall accept delivery of fats and oils for his raw material inventory if the fats and oils in his raw material inventory are, or would through such acceptance become, in excess of a practicable working minimum inventory. This paragraph (d) (1) does not, however, restrict the inventories of any fat or oil in the form in which it is first produced by the crusher or renderer of any vegetable oil foots or their fatt acids.

(2) No manufacturer shall hereafter change the condition of any fat or oil in his raw materials inventory, or add any additional materials thereto, except to the extent necessary to store any such fat or oil in his raw materials inventory in a form necessary to prevent deterioration thereof, or except to put such fats or oils into process for the manufacture of his products subject to the limitations of paragraph (d) (3).

(3) No manufacturer shall hereafter increase the rate at which fats and oils are put into process by him, except to the extent necessary to meet the required deliveries of his finished products within the limitations established by this order and to maintain only a practicable minimum working inventory of such finished products. The term "practicable minimum working inventory" as used in paragraph (d) (1) and (3), shall be strictly construed. The mere fact that the turn-over has increased, or that materials are difficult to obtain, does not justify maintaining inventories above the minimum at which his operations can be continued.

(e) *Prohibited uses of fats and oils.* (1) No person shall use or consume any butter or any of the following fats and oils in any class of use listed in Schedule A other than the manufacture of margarine or the manufacture of other edible finished products:

Lard, rendered pork fat, oleo oil, oleo stearin, oleo stock, edible tallow, edible olive oil, peanut oil, sunflower oil, seasame seed oil, raisin seed oil, tomato seed oil, cottonseed oil, corn oil, soyabean oil, whale oil (excluding sperm).

(2) No person shall use or consume, in the manufacture of soap, any sardine oil, pilchard oil, or herring oil.

(3) Nothing in paragraphs (e) (1) or (e) (2) hereof shall restrict the use of any fat or oil in any inedible product or soap where and to the extent that:

(i) the quantity of any such fat or oil owned by such person on December 31, 1942, is less than 60,000 lbs.;

(ii) any such fat or oil is used in the manufacture, preparation, or finishing of protective coatings and coated fabrics under the provisions of paragraph (b) (5) (ii) hereof, or in the manufacture of USP XII soap for medicinal use; or soft soap, hospital grade, according to United States Army specifications No. 4-1027A (February 5, 1941) for delivery to the United States Army:

(iii) any such fat or oil is a by-product or residue (except stearin) of the permitted processing of any fat or oil; or consists of tank bottoms of any fat or oil;

(iv) such fat or oil consists of soyabean oil and is used either in the manufacture of synthetic resins or as a plastic in the manufacture of lacquers and coated fabrics, exclusive of linoleum and oil cloth; or

(v) the use by any person of any such fat or oil in any class of use which has been specifically authorized by the Director, on such person's establishing to the satisfaction of the Director by letter addressed to the Director of Food Distribution, United States Department of Agriculture, Washington, D. C., Ref: FD 42, that such fat or oil was owned by him on December 31, 1942, and was on such date unfit for edible use.

(f) *Existing contracts.* The restrictions of this order concerning delivery, acceptance, use, processing, and consumption of fats and oils shall be observed without regard to existing contracts or any rights accrued or payments made thereunder.

(g) *Records and reports.* (1) Each manufacturer, who in any calendar quarter uses or consumes more than 6,000 lbs. of fats and oils in the aggregate, shall file with the Bureau of Census, Washington, D. C., each of the following reports in the following manner:

(i) He shall file on or before the 20th day of each month Bureau of Census Form BM-1, or such other form or forms as may be prescribed by the Director, showing the consumption of fats and oils during the preceding month; and

(ii) He shall file on or before the 20th day of the second month of the succeeding quarter, Bureau of Census Form BM-2, or such other form or forms as may be prescribed by the Director, showing the consumption of fats and oils during the preceding quarter.

(2) Every manufacturer and every other person subject to this order shall maintain such records for at least two years (or for such other period of time as the Director may designate) and shall execute and file such reports upon such forms and submit such information as the Director may from time to time request or direct and within such times as he may prescribe.

(h) *Audits and inspections.* Every person subject to this order shall, upon request, permit inspections, at all reasonable times, of his stocks of fats and oils and premises used in his business, and all of his books, records, and accounts shall, upon request, be submitted to audit and inspection by the Director.

(i) *Petition for relief from hardship.* Any person affected by this order who considers that compliance herewith would work an exceptional and unreasonable hardship on him, may petition in writing (in triplicate) for relief to the Director, setting forth all pertinent facts and the nature of the relief sought. The Director may thereupon take such action as he deems appropriate and such action shall be final.

(j) *Violations.* Any person who wilfully violates any provision of this order or who by any act or omission falsifies records to be kept or information to be furnished pursuant to this order or wilfully conceals a material fact concerning a matter within the

jurisdiction of any Department or agency of the United States may be prohibited from receiving or making further deliveries of any material subject to allocation; and such further action may be taken against him as the Director deems appropriate, including recommendations for prosecution under Section 35a of the Criminal Code (18 U.S.C. 1940 ed. 80), under paragraph 5 of Section 301 of Title III of the Second War Powers Act, and under any and all other applicable laws.

(k) *Communications to the Department of Agriculture.* All reports required to be filed hereunder and all communications concerning this order shall, unless otherwise directed, be addressed to: Director of Food Distribution, United States Department of Agriculture, Washington, D. C., Ref.: FD 42.

(l) *Effect of other orders.* In so far as any other order of the Secretary of Agriculture or the Director, heretofore or hereafter issued, limits or curtails to a greater extent than herein provided the use, acquisition, or disposition of any fat or oil, the limitations of such other order shall control.

(m) *General Preference Order M-71 superseded.* This order supersedes in all respects General Preference Order M-71 of the War Production Board except that as to violations of said order or rights accrued, liabilities incurred, or appeals taken under said order prior to the effective date hereof said General Preference Order shall be deemed in full force and effect for the purpose of sustaining any proper suit, action, or other proceeding with respect to any such violation, right, or liability. Any appeal pending under said General Preference Order shall be considered under paragraph (1) hereof.

(n) *Territorial extent.* This order applies to all persons in the United States, its territories and possessions, and the District of Columbia.

(o) *Bureau of the Budget approval.* The reporting requirements of this order have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942. Subsequent specific record keeping or reporting requirements by the Director will be subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

(p) *Effective date.* This order shall be effective on April 1, 1943.

(E. O. 9280, 7 F.R. 10179)

Issued this 31st day of March, 1943.

CLAUDE R. WICKARD,
Secretary of Agriculture.

SCHEDULE A

Class of use—	Permitted percentage
Manufacture of margarine	180
Manufacture of other edible finished products, including shortening	88
Manufacture of soap, exclusive of soap made from domestic vegetable oil foots or the fatty acids from such foots	84
Manufacture of soap from foots made from domestic vegetable oils or the fatty acids from such foots	100
Manufacture of paints, varnishes, lacquers and all other protective coatings, except water paints	50
Manufacture of water paints (on the basis of one pound of oil for each gallon of paste water paint manufactured during the base period and one pound of oil for each eight pounds of dry casein or dry protein paint manufactured during the base period)	50
Manufacture of linoleum, oilcloth, and felt base floor coverings	50
Manufacture of oilcloth (for all purposes other than floor coverings) and all other coated fabrics	50
Manufacture of printing inks, including lithographing, offset, silk screen, and other processing inks	90

HIGH LAURIC ACID CONTENT OILS

FDO-43

TITLE 7—AGRICULTURE
CHAPTER XI—FOOD DISTRIBUTION ADMINISTRATION

(Food Distribution Order No. 43 Cocoanut, Babassu, Palm Kernel and Other High Lauric Acid Oils)

Part 1460—Fats and Oils

RESTRICTIONS ON USE, PROCESSING, SALE, AND DELIVERY OF COCOANUT, BABASSU, PALM KERNEL, AND OTHER HIGH LAURIC ACID OILS

Pursuant to authority vested in me by Executive Order No. 9280, dated December 5, 1942, and to assure an adequate supply and efficient distribution of cocoanut, babassu, palm kernel, and other high lauric acid oils to meet war and essential civilian needs, IT IS HEREBY ORDERED as follows:

1460.10 Use, processing, sale, and delivery of cocoanut, babassu, palm kernel, and other high lauric acid oils restricted.

(a) *Definitions.* When used in this order, unless otherwise distinctly expressed or manifestly incompatible with the intent thereof:

(1) The term "high lauric acid oils" means cocoanut oil, babassu oil, palm kernel oil, and all other oils having a lauric acid content of thirty-five percent (35%) or higher, whether crude, refined, bleached, or deodorized.

(2) The term "person" means any individual, partnership, corporation, association, or other business entity.

(3) The term "Director" means the Director of Food Distribution, United States Department of Agriculture, or any employee of the United States Department of Agriculture designated by such Director.

(b) *Prohibited uses.* The use or consumption by any person of high lauric acid oils in the following manufactures, processes, or uses is prohibited:

(1) Any manufacture, process, or use in which glycerine is not produced.

(2) Any manufacture or process in which glycerine is produced, where the recovery of glycerine does not meet the requirements of Food Distribution Order No. 33.[1]

(c) *Permitted uses.*

(1) Any person may use or consume high lauric acid oils without regard to the restrictions imposed by paragraphs (b) (1) and (b) (2) hereof, in the following instances:

(i) Where the total use or consumption of high lauric acid oils by any person is less than 3,000 pounds in each of the several three month periods of the year commencing January 1, April 1, July 1, and October 1; or

(ii) Where any person uses or consumes Tucum and Muru-muru oils in the manufacture of any edible product, without limitation on such use or consumption; Provided, That such use or consumption shall be subject to the provisions of paragraph (f) hereof.

(2) Notwithstanding the provisions of paragraphs (c) (1) (i) and (ii) hereof, no person shall use or consume high lauric acid oils in the manufacture of any margarine, shortening, or cooking fats.

(d) *Reports of unsalable oils.* Any high lauric acid oils at any time remaining in the hands of any person which, by reason of any of the provisions of paragraphs (b) (1) and (2) and (c) (1) (i), (ii) and (2) hereof, may not be used or consumed by him, shall be reported to the Director.

(e) *Restrictions on processing.* After the effective date of this order, no person shall process or change the condition of any high lauric acid oils in preparation for any manufacture or use permitted by this order, except to the extent necessary for such preparation, and then only in such quantities as may be necessary to meet his normal production schedule or, if such oils are to be manufactured or used by another person, then the normal production schedule of such other person.

(f) *Withholding of high lauric acid oils.* Every person who was required by General Preference Order M-60[2] of the War Production Board to set aside an inventory quota shall use, put in process, sell, or deliver, all or any part of such inventory quota only upon express instruction of the Director: Provided, That this paragraph (f) shall not be construed to prevent crushing of copra or other seeds or nuts, or to prevent changing the condition of such oil so set aside to the extent necessary to prevent deterioration while carried in inventory. Such quotas shall be held subject to the direction of the Director.

(g) *Restrictions on sales and deliveries.* No person shall sell or, directly or indirectly, deliver, or cause to be delivered, any high lauric acid oils for any use prohibited by para-

graph (b) (1) and (2), and (c) (1) (i), (ii) and (2) hereof or in violation of paragraph (f) hereof; and no person shall accept deliveries of any high lauric oils for any prohibited use or for any greater quantities or proportions than permitted for consumption.

(h) *Intra-company transactions.* The prohibitions or restrictions contained in this order with respect to deliveries shall, in the absence of a contrary direction, apply not only to deliveries to other persons, including affiliates and subsidiaries, but also to deliveries from one branch, division, or section of a single enterprise to another branch, division, or section of the same or any other enterprise owned or controlled by the same person.

(i) *Existing contracts.* The restrictions of this order concerning the use, processing, sale, and delivery of high lauric acid oils shall be observed without regard to existing contracts or any rights accrued or payments made thereunder.

(j) *Record and reports.* Every person subject to this order shall maintain such records for at least two years (or for such other period of time as the Director may designate) and shall execute and file such reports upon such forms and submit such information as the Director may from time to time request or direct, and within such times as he may prescribe.

(k) *Bureau of the Budget Approval.* The reporting requirements of this order have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942. Subsequent specific record keeping or reporting requirements by the Director will be subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

(l) *Audits and inspections.* Every person subject to this order shall, upon request, permit inspections of his stocks of cocoanut, babassu, palm kernel, and other high lauric acid oils, and premises used in his business, and all of his books, records, and accounts shall, upon request, be submitted to audit and inspection by the Director.

(m) *Petition for relief from hardship.* Any person affected by this order who considers that compliance herewith would work an exceptional and unreasonable hardship on him, may petition in writing (in triplicate) for relief to the Director, setting forth all pertinent facts and the nature of the relief sought. The Director may thereupon take such action as he deems appropriate and such action shall be final.

(n) *Violations.* Any person who wilfully violates any provision of this order or who by any act or omission falsifies records to be kept or information to be furnished pursuant to this order or wilfully conceals a material fact concerning a matter within the jurisdiction of any Department or agency of the United States may be prohibited from receiving or making further deliveries of any material subject to allocation; and such further action may be taken against him as the Director deems appropriate, including recommendations for prosecution under Section 35a of the Criminal Code (18 U.S.C. 1940 ed. 80), under paragraph 5 of Section 301 of Title III of the Second War Powers Act, and under any and all other applicable laws.

(o) *Communications to the Department of Agriculture.* All reports required to be filed hereunder and all communications concerning this order shall, unless otherwise directed, be addressed to: Director of Food Distribution, United States Department of Agriculture, Washington, D. C., Ref.: FD 43.

(p) *General Preference Order M-60 of the War Production Board superseded.* This order supersedes in all respects General Preference Order M-60[2] of the War Production Board, except that as to violations of said order or rights accrued, liabilities incurred, or appeals taken under said order prior to the effective date hereof, said General Preference Order M-60 shall be deemed in full force and effect for the purpose of sustaining any proper suit, action, or other proceeding with respect to any such violation, right, or liability. Any appeal pending under said order shall be considered under paragraph (m) hereof.

(q) *Territorial extent.* This order applies to all persons in the United States, its territories and possessions, and the District of Columbia.

(r) *Effective date.* This order shall be effective on April 1, 1943 as of 12:01 a.m., e.w.t.

(E. O. 9280, 7 F.R. 10179)

Issued this 31st day of March, 1943.

/s/ CLAUDE R. WICKARD
Secretary of Agriculture

[1] 8 F. R. 3475

[2] 7 F. R. 2185

[3] 7 F. R. 2185

PALM OIL
FDO-38

TITLE 7—AGRICULTURE
CHAPTER XI—FOOD DISTRIBUTION ADMINISTRATION

(Food Distribution Order No. 38, Palm Oil)

Part 1460—Fats and Oils

RESTRICTIONS ON USE, CONSUMPTION, PROCESSING, SALE AND DELIVERY OF PALM OIL

Pursuant to the authority vested in me by Executive Order No. 9280, dated December 5, 1942, and to assure an adequate supply and efficient distribution of palm oil to meet war and essential civilian needs, IT IS HEREBY ORDERED as follows:

1460.9 Use, consumption, processing, sale and delivery of palm oil restricted.

(a) *Definitions.* When used in this order, unless otherwise distinctly expressed or manifestly incompatible with the intent thereof:

(1) The term "palm oil" means all oils of any grade or description, heretofore known or sold as palm oil, whether crude, refined, bleached, or deodorized. (2) The term "dealer" means any person who imports, buys, sells, or distributes palm oil. (3) The term "person" means any individual, partnership, corporation, association, or other business entity. (4) the term "Director" means the Director of Food Distribution, United States Department of Agriculture, or any employee of the United States Department of Agriculture designated by such Director.

(b) *General Restrictions on Use.* Unless specifically authorized by the Director, no person shall use or consume palm oil except in the following manufactures or processes:

(1) The manufacture of tinplate, terneplate, long terneplate, steel sheets, steel strip, and blackplate; (2) Any manufacture, process or use in which glycerine is produced in compliance with the provisions of Food Distribution Order No. 33;[1] (3) Any manufacture, process, or use by any person whose total use or consumption of palm oil is less than 2,000 pounds in each of the several three month periods of the year commencing on January 1, April 1, July 1, and October 1.

(c) *Restrictions on Processing.* No person shall hereafter put in process or change the condition of any palm oil in preparation for any manufacture, process, or use permitted by this order except to the extent necessary for such preparation and then only in such quantities as may be necessary to meet his normal production schedule or, if such palm oil is to be manufactured or used by another person, then the normal production schedule of such other person.

(d) *Reserve.* Every person who was required by General Preference Order M-59 of the War Production Board[2] to set aside an inventory quota of palm oil shall use, put in process, sell, or deliver all or any part of such quota only upon express instruction of the Director, except that this paragraph (d) shall not be construed to prevent changing the condition of the oil so set aside to the extent necessary to prevent deterioration while carried in inventory.

(e) *Restrictions on sales and deliveries.* No person shall sell or deliver any palm oil to any other person, except a dealer or a person using such oil in the manufactures, processes, or uses set out in paragraph (b) hereof, except as may be specifically authorized by the Director.

(f) *Intra-company transactions.* The prohibitions or restrictions contained

in this order with respect to deliveries shall, in the absence of a contrary direction, apply not only to deliveries to other persons, including affiliates and subsidiaries, but also to deliveries from one branch, division, or section of a single enterprise, to another branch, division, or section of the same or any other enterprise owned or controlled by the same person.

(g) *Existing contracts.* The restrictions of this order concerning the use, consumption, processing, sale, and delivery of palm oil shall be observed without regard to existing contracts or any rights accrued or payments made thereunder.

(h) *Records and reports.* Every person subject to this order shall maintain such records for at least two years (or for such other period of time as the Director may designate) and shall execute and file such reports upon such forms and submit such information as the Director may from time to time request or direct, and within such time as he may prescribe, subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

(i) *Audits and inspections.* Every person subject to this order shall, upon request, permit inspections, at all reasonable times, of his stocks of palm oil and of the premises used in his business, and all of his books, records, and accounts shall, upon request be submitted to audit and inspection by the Director.

(j) *Petition for relief from hardship.* Any person affected by this order who considers that compliance herewith would work an exceptional and unreasonable hardship on him may petition in writing (in triplicate), for relief to the Director setting forth all pertinent facts and the nature of the relief sought. The Director may thereupon take such action as he deems appropriate and such action shall be final.

(k) *Violations.* Any person who wilfully violates any provisions of this order or who by any act or omission falsifies records to be kept or information to be furnished pursuant to this order, or who wilfully conceals a material fact concerning a matter within the jurisdiction of any Department or agency of the United States may be prohibited from receiving or making further deliveries of any material subject to allocation, and such further action may be taken against him as the Director deems appropriate, including recommendations for prosecution under Section 35a of the Criminal Code (18 U.S.C. 1940 ed. 80), under paragraph 5 of Section 301 of Title III of the Second War Powers Act, and under any and all other applicable laws.

(l) *Communications to the Department of Agriculture.* All communications concerning this order shall, unless otherwise directed, be addressed to Director of Food Distribution, United States Department of Agriculture, Washington, D. C., Ref: FD-38.

(m) General Preference Order M-59 superseded. This order supersedes in all respects General Preference Order M-59 of the War Production Board,[2] except that as to violations of said order or rights accrued, liabilities incurred or appeals taken under said order prior to the effective date hereof, said General Preference Order shall be deemed to be in full force and effect for the purpose of sustaining any proper suit, action, or other proceeding with respect to any such violation, right or liability. Any appeal pending under the said General Preference Order shall be considered under paragraph (j) hereof.

(n) Territorial extent. This order applies to all persons in the United States, its territories and possessions, and the District of Columbia.

(o) Effective date. This order shall be effective on March 24, 1943, as of 12:01 a.m., e.w.t.

(E. O. 9280, 7 F. R. 10179)

Issued this 19th day of March, 1943.

/s/ PAUL H. APPLEBY

Acting Secretary of Agriculture

[1] 8 F. R.
[2] 7 F. R. 2186
[3] 7 F. R. 2186

GLYCERINE RECOVERY

FDO-33

TITLE 7—AGRICULTURE

CHAPTER XI—FOOD DISTRIBUTION ADMINISTRATION

(Food Distribution Order No. 33, Glycerine Recovery)

Part 1460—Fats and Oils

REQUIRED RECOVERY OF GLYCERINE

Pursuant to the authority vested in me by Executive Order No. 9280, dated December 5, 1942, and to assure an adequate supply and efficient distribution of glycerine to meet war and essential civilian needs,

IT IS HEREBY ORDERED, as follows:

1460.2 *Glycerine Recovery.*

(a) *Definitions.* When used in this order, unless otherwise distinctly expressed or manifestly incompatible with the intent thereof:

(1) The term "fats and oils" means all of the raw, crude, and refined fats and fatty oils and greases. (2) The term "neutral fats or oils content" means that saponifiable portion of fats or oils at point of saponification or hydrolysis obtained by subtracting from the total weight of such fats and oils the sum of the following: free fatty acids, moisture, insoluble impurities, and unsaponifiables. Free fatty acids, moisture, insoluble impurities, and unsaponifiables shall be determined by the official methods of the American Oil Chemists Society. (3) The term "fair average quality crude glycerine" means soap lye crude glycerine and saponification crude glycerine meeting the following specifications.

Soap lye crude glycerine:
- Glycerol content—not less than 80%
- Ash—not more than 10%
- Organic Residue—not more than 2%

Saponification crude glycerine:
- Glycerol content—not less than 88%
- Ash—not more than 2%
- Organic Residue—not more than 1.5%

Glycerol content, ash, and organic residue shall be determined by the official methods of the American Oil Chemists Society.

(4) The term "person" means any individual, partnership, corporation, association, or other business entity.

(5) The term "Director" means the Director of Food Distribution, United States Department of Agriculture, or any employee of the United States Department of Agriculture designated by such Director.

(b) *Required recovery of crude glycerine.*

(1) Except as provided in paragraph (d) hereof, no person shall saponify or hydrolyze any fat or oil in any process in which glycerine is produced unless:

(i) Where glycerine is produced by the saponification of the fats and oils (soap making), the average amount of glycerol (both free and combined) remaining in the finished product, not considering glycerine produced from commercial fatty acids or vegetable oil foots, shall not be more than eight-tenths of one per cent (0.8%), calculated on the anhydrous soap basis of that portion of the soap which is derived from fats and oils defined under paragraph (a) (1) hereof, but exclusive of any portion of the soap which may be made from rosin, commercial fatty acids, vegetable oil foots, and tall oil, and

(ii) Not less than 92% of the glyceral content of the spent lyes shall be recovered as crude glycerine (100% glycerol basis). The glycerol content of such spent lyes shall be considered to be the glycerol theoretically contained in the neutral fats or oils content of the stock originally used less the maximum amount of glycerol permitted in the soap.

(iii) Where the glycerine is produced by the hydrolysis of fats or oils (fats splitting), the split shall be not less than 95% complete. Not less than 94% of the glycerol content of the glycerine sweet water resulting from such splitting process shall be recovered as crude glycerine (100% glycerol basis). The glycerol content of such sweet water shall be considered to be the glycerol theoretically contained in the neutral fat or oil content of the stock originally used,

less the maximum permitted amount (based on 95% split) of glycerol contained in the split fat or oil.

(c) *Required standard of refining crude glycerine.*

In the refining of fair average quality crude glycerine ,not less than 96% of the glycerol content of the crude glycerine shall be recovered as refined glycerine (100% glycerol basis).

(d) *Operations not subject to standard of glycerine recovery.*

The provisions of paragraph (b) hereof shall not be applicable to:

(1) Any person whose consumption of fats and oils or fatty acids in the aggregate does not exceed 10,000 pounds in the calendar month;

(2) Any person whom the Director may specifically authorize to operate, on such person's establishing to the satisfaction of the Director, by letter addressed to: Director of Food Distribution, United States Department of Agriculture, Washington, D. C., Ref: FD 33, that he is recovering the maximum amount of glycerine that is reasonably possible with the facilities which he has or may reasonably be expected to secure or utilize;

(3) The sulfonation of any fats and oils, alkali or acid refining of fats or oil, manufacture of lubricating greases, or processing of food;

(4) The manufacture of the following soaps U. S. P. XII to fill orders for medical use only; sapo mollis medicinalis, linimentum saponis mollis, liquor cresolis saponatus; and the manufacture of soft soap, hospital grade, according to United States Army specification No. 4-1027A (February 5, 1941) for delivery to the United States Army.

(5) The manufacture of soap or fatty acids from raw or acidulated domestic vegetable oil foots.

(e) *Records and reports.*

(1) Each refiner of glycerine, regardless of amount, and each person who saponifies or hydrolyzes more than 3,500 pounds of oils, fats, or fatty acids in any calendar or fiscal month in a process in which glycerine could be recovered (not including any operation referred to in paragraph (d) (3) hereof) shall file with the Director of Food Distribution, United States Department of Agriculture, Washington, D. C., Ref: FD 33, not later than the 20th day of the succeeding month, War Production Board Form PD-712, or such other form or forms as may be prescribed by the Director; properly executed by him. Such form PD-712 shall be filed by each person who saponifies or hydrolyzes more than such 3,500 pounds of oils, fats, and fatty acids in such month, whether or not he is exempted under paragraphs (d) (1), (d) (2), (d) (4), or (d) (5) hereof.

(2) Where a person is both a manufacturer and refiner, he shall file a separate form in each capacity.

(3) Every person subject to this order shall maintain such records for at least two years (or for such other periods of time as the Director may designate), and shall execute and file such other reports upon such forms and submit such information as the Director may from time to time request or direct, and within such time as he may prescribe.

(f) *Bureau of the Budget Approval.* The reporting requirements of this order have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942 Subsequent specific record-keeping or reporting requirements which may be prescribed by the Director will be subject to the Approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

(g) *Existing contracts.* The restrictions of this order concerning the recovery of glycerine shall be observed without regard to existing contracts or any rights accrued or payments made thereunder.

(h) *Effect on other orders.* Where different standards of recovery are imposed by this order and any other order or orders, the provisions of the order requiring the highest glycerine recovery shall control.

(i) *Petition fo relief from hardship.* Any person affected by this order who considers that compliance herewith would work an exceptional and unreasonable hardship upon him may petition in writing (in triplicate) for relief to the Director, setting forth all pertinent facts and the nature of relief sought. The Director may thereupon take such action as he deems appropriate and such action shall be final.

(j) *Violations.* Any person who wilfully violates any provisions of this order or who by any act or omission falsifies records to be kept or information to be furnished pursuant to this order or wilfully conceals a material fact concerning a matter within the jurisdiction of any Department or agency of the United States may be prohibited from receiving or making further deliveries of any material subject to allocation, and such further action may be taken against him as the Director deems appropriate, including recommendations for prosecution under Section 35a of the Criminal Code (18 U.S.C. 1940 ed. 80), under paragraph 5 of Section 301 of Title III of the Second War Powers Act, and under any and all other applicable laws.

(k) *Audits and inspections.* Every person subject to this order shall, upon request, permit inspections, at all reasonable times, of his stocks of glycerine and premises used in his business, and all of his books, records, and accounts shall, upon request, be submitted to audit and inspection by the Director.

(l) *Communications to the Department of Agriculture.* All reports required to be filed hereunder and all communications concerning this order shall, unless otherwise directed, be addressed to: Director of Food Distribution, United States Department of Agriculture, Washington, D. C. Ref: FD33.

(m) *Conservation Order M-193 superseded.* This order supersedes in all respects Conservation Order M-193[1] of the War Production Board, except that as to violations of said order or rights accrued, liabilities incurred, or appeals taken under said order prior to the effective date hereof, said Conservation Order shall be deemed in full force and effect for the purpose of sustaining any proper suit, action, or other proceeding with respect to any such violation, right, or liability. Any appeal pending under said Conservation Order shall be considered under paragraph (i) hereof.

(n) *Effective date.* This order shall be effective as of the 24th day of March, 1943, at 12:01 a.m., e.w.t.

(E. O. 9280, 7 F. D. 10179)

Issued this 19th day of March, 1943.

/s/ PAUL H. APPLEBY
Acting Secretary of Agriculture

[1] 7 F. R. 9128

GLYCERINE USE
FDO-34

TITLE 7—AGRICULTURE
CHAPTER XI—FOOD DISTRIBUTION ADMINISTRATION
(Food Distribution Order No. 34, Glycerine)
Part 1460—Fats and Oils
RESTRICTIONS ON USE, PROCESSING, AND DELIVERY OF GLYCERINE

Pursuant to the authority vested in me by Executive Order No. 9280, dated December 5, 1942, and to assure an adequate supply and efficient distribution of glycerine to meet war and essential needs, IT IS HEREBY ORDERED as follows:

1460.3. *Glycerine: use, processing and delivery restricted.*

(a) *Definitions.* When used in this order, unless otherwise distinctiy expressed or manifestly incompatible with the intent thereof: (1) The term "glycerine" means any and all concentrations of glycerol, from whatever source derived and whether crude or refined. (2) The term "producer" means any person engaged in the production of glycerine and includes any person who has glycerine produced for him pursuant to toll agreement and any person who, on splitting any fat or oil, is entitled to the glycerine resulting therefrom. The term does not include any refiner of glycerine. (3) the term "refiner" means any person engaged in the refining of glycerine. (4) The term "distributor" means any person who has purchased or purchases glycerine for purposes of resale. (5) The term "base period" means the calendar year 1940. (6) The

term "person" means any individual, partnership, corporation, association, or other business entity. (7) The term "Director" means the Director of Food Distribution, United States Department of Agriculture, or any employee of the United States Department of Agriculture designated by such Director.

(b) *Restrictions on delivery and use.* (1) No person shall deliver, accept delivery of, or use glycerine except as specifically authorized and directed by the Director. (2) Authorizations or directions with respect to deliveries and use in each month will, so far as practicable, be issued by the Director prior to the commencement of such month, but the Director may, at any time at his discretion and notwithstanding the provisions of paragraph (c) hereof, issue directions with respect to deliveries to be made or accepted or with respect to the use or uses which may or may not be made of material to be delivered or then on hand. He may also at any time issue directions to a producer or refiner with respect to grades of glycerine to be produced or refined. (3) Each person who is specifically authorized to accept delivery of glycerine shall use such material for the purpose authorized, and only for such purpose, except as otherwise specifically directed by the Director or as provided in paragraph (b) (4) hereof. (4) Glycerine allocated for inventory shall not be used except as specifically authorized or directed by the Director. Glycerine allocated to fill a specific order or class of orders shall revert to inventory where and to the extent that such order or class of orders is not, for any reason, filled.

(c) *Exceptions to requirement or specific authorization.* Notwithstanding the provisions of paragraph (b) (1) hereof, specific authorization of the Director shall not be required for: (1) Acceptance of delivery, or use, by any person in any calendar month of 50 pounds or less of glycerine in the aggregate. For the purposes of this paragraph (c) (1), the term "person" means usual purchasing unit, whether plant, distributing agency, corporation, or other legal entity. (2) Use by (but not delivery to) the Army or Navy of the United States, United States Maritime Commission, or War Shipping Administration, without regard to quantity. (3) Acceptance of delivery, or use, by any person, in any calendar month of not more than 1150 pounds of glycerine in the aggregate (but more than 50 pounds): *Provided, however,* That the quantity of which delivery may be accepted, or use made, in any calendar month shall be subject to the following additional restrictions:

(i) Where acceptance of delivery, or use, is by a hospital, clinic, research and control laboratory, or other institution whose primary object is the maintenance of public health, and where the glycerine is to be used solely by the organization accepting delivery: no further restriction;

(ii) Where acceptance of delivery is by pharmacists for use in (or use is) the individual compounding of prescriptions of doctors, dentists, or veterinarians or where acceptance of delivery is for (or use is) the manufacture of sterile solutions, ampoules, basic medicinal chemicals not in compounded form, dental impression compounds, biological preparations, and embalming fluids: no further restriction;

(iii) Where acceptance of delivery is for (or use is) the manufacture of other medicinal or veterinary preparations: a further restriction to one hundred percent of 1/12 of the quantity of glycerine used in such manufacture in the base period.

(iv) Where acceptance of delivery or use is not within (i), (ii) or (iii) hereof: a further restriction to 70 percent of 1/12 of the quantity of glycerine used in the base period;

(v) Where the amount of which delivery may be accepted under paragraphs (b) (1) and (c) (3) hereof does not represent a practical shipping unit or multiple thereof, such paragraphs shall not prevent the acceptance of delivery of an amount approximating such permitted quantity: *Provided, however,* That the difference shall in no event exceed more than one small drum (approximately 550 pounds) and that the person accepting delivery shall in the next succeeding order or orders make appropriate adjustment.

(4) The delivery by any person to any other person who shall have filed with the person making delivery a certificate in substantially the following form:

"The undersigned purchaser hereby certifies to the United States Department of Agriculture, Food Distribution Administration, and to his supplier (1) that he is familiar with the terms of Food Administration Order No. 34; (2) that the ..... pounds of glycerine hereby ordered for delivery in.....194.., month will not, taking into consideration all other glycerine ordered for delivery in such month, exceed the quantity which he is permitted by said order to receive without a specific authorization of the Director; (3) that his purchase falls within paragraph (c) (1); paragraphs (c) (3), (i), (ii), (iii), (iv) (Strike out inapplicable paragraphs) and (4) that he has not received any specific authorization from the Director to receive or use glycerine during such month.

....
Date Name of Purchaser
By.....
Name of authorized official Title"

Such certificate shall be signed by an authorized official of the purchaser. The receipt of such certificate shall not authorize the delivery of glycerine by a producer or distributor when he knows or has reason to believe the same to be false, but in the absence of such knowledge or belief, he may rely on the certificate. No certificate shall be required where the amount delivered to any person does not exceed one gallon.

(5) The delivery of crude glycerine to, or acceptance of delivery of crude glycerine by, a refiner, for refining or the refining of crude glycerine.

(d) *Prohibited use.* No person shall use or consume glycerine in the manufacture of any anti-freeze product or preparation.

(e) *Applications and reports.* (1) Each person requiring authorization to accept delivery of or use glycerine during any calendar month (including a person seeking authorization to accept delivery of glycerine for resale) shall file application therefor on or before the 15th day of the month preceding the month for which authorization for delivery or use is requested. In each case the application shall be made upon War Production Board Form PD-600 or such other form or forms as may be prescribed by the Director. Forms may be obtained at regional offices of the Food Distribution Administration or local field offices of the War Production Board. Five copies shall be prepared, of which four shall be forwarded to the Director of Food Distribution, United States Department of Agriculture, Washington, D. C., Ref: FD-34, and the fifth retained as a file copy. For the purposes of this order, if War Production Board Form PD-600 is used, it shall be completed in the manner prescribed therein, subject to the following special instructions:

(i) On one of the four copies filed with the Director of Food Distribution, Tables II and III shall be left blank. An applicant seeking authorization to accept delivery or use at two or more plants shall file a separate set of Form PD-600 for each plant, unless authorized by the Director to file a consolidated application.

(ii) In the heading, under the name of chemical, specify "glycerine"; under WPB Order No., specify "FD—34"; under unit of measure, specify "pounds"; in the heading of Table I, insert in the blank the month and year for which authorization for acceptance of delivery or use is sought. Also state in the space under "supplier with whom this order is placed" the name of your usual supplier, and also list his shipping point.

(iii) In columns 1, 11, and 19, specify grade or grades in terms of the following:

80% soap lye crude
88% saponification crude
Yellow distilled
High-gravity (dynamite)
Chemically pure
Other (describe)

(iv) In Column 3 specify your primary product in terms of the following, in each case specify the item number listed below:

1. Drugs and Pharmaceuticals
2. Explosives
3. Synthetic resins (specify)

4. Ester gums
5. Rubber products
6. Gaskets and cork products
7. Cellulose films (specify)
8. Glassine and grease-proof paper (specify)
9. Printing rollers
10. Printing supplies (specify)
11. Textile (printing, dyeing and finishing)
12. Leather products
13. Adhesives (including book binding)
14. Paper other than No. 8
15. Beverages, flavoring extracts, candy and gum (specify)
16. Other edible products (specify)
17. Tobacco
18. Cosmetics, toilet preparations, dentifrices, and shaving preparations (specify)
19. Chemical manufacture not elsewhere classified (specify)
20. Other class of product (specify)
21. Resale (as glycerine)
22. Inventory (see paragraph (b) (4)).

(v) In Column 4, specify ultimate use of product (for example, if the "primary product" called for by Column 3 is "glassine and grease-proof paper," the "ultimate use of product" might be "food wrapping"), and also specify in each case whether your customer is Army, Navy, other government agency, lend-lease, or commercial customer. If a primary product made has more than one ultimate use, indicate approximate percentage applicable to each use. Where the Form PD-600 is an application for glycerine for resale (as glycerine), or for glycerine for inventory, leave Column 4 blank.

(vi) In Column 10, specify your average monthly use of glycerine in 1940 and use in corresponding month in 1940 in each class of use for which authorization to accept delivery (or use) is sought.

(vii) Leave blank Table IV.

(viii) In each case where the application on Form PD-600 for authority to accept delivery of, or use, glycerine is granted, one copy of Form PD-600, signed by the Director, will be returned to the applicant. Where authorization is to accept delivery, a second copy will be sent by the Director to the supplier selected by the Director which will be his authorization to deliver as indicated on such copy.

(2) Each producer, refiner, or distributor who, in any month produces, refines, or delivers more than 1150 pounds of glycerine shall file with the Director on or before the 15th day of the succeeding month one copy of War Production Board Form PD-383A (revised) or such other form or forms as may be prescribed by the Director. (3) The Director may issue other and further directions to any such person with respect to preparing and filing Forms PD-600 and PD-383A (revised).

(f) *Notification of customers.* Each supplier shall notify his regular customers, as soon as possible, of the requirements of this order, but failure to receive such notice shall not excuse any person from complying with the term hereof.

(g) *Intra-company deliveries.* The prohibition and restrictions of this order with respect to deliveries of glycerine shall apply not only to deliveries to other persons, including affiliates and subsidiaries, but also deliveries from one branch, division, or section of a single enterprise to another branch, division, or section of the same or any other enterprise under common ownership or control.

(h) *Records and reports.* Every person subject to this order shall maintain such records for at least two years (or for such other periods of time as the Director may designate), and shall execute and file such reports upon such forms and submit such information as the Director may from time to time request or direct, and within such times as he may prescribe.

(i) *Bureau of the Budget Approval.* The reporting requirements of this order have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942. Subsequent specific record-keeping or reporting requirement by the Director will be subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

(j) *Audits and inspections.* Every person subject to this order shall, upon request, permit inspections, at all reasonable times, of his stocks of glycerine and premises used in his business, and all of his books, records, and accounts shall, upon request, be submitted to audit and inspection by the Director.

(k) *Petition for relief from hardship.* Any person affected by this order who considers that compliance herewith would work an exceptional and unreasonable hardship on him may petition in writing (in triplicate) for relief to the Director, setting forth all pertinent facts and the nature of the relief sought. The Director may thereupon take such action as he deems appropriate, and such action shall be final.

(l) *Violations.* Any person who wilfully violates any provision of this order or who by any act or omission falsifies records to be kept or information to be furnished pursuant to this order or wilfully conceals a material fact concerning a matter within the jurisdiction of any Department or agency of the United States may be prohibited from receiving or making further deliveries of any material subject to allocation; and such further action may be taken against him as the Director deems appropriate, including recommendations for prosecution under Section 35a of the Criminal Code (18 U.S.C. 1940 ed. 80), under paragraph 5 of Section 301 of Title III of the Second War Powers Act, and under any and all other applicable laws.

(m) *General Preference Order M-58 superseded.* This order supersedes in all respects General Preference Order M-58 of the War Production Board,[1] except that as to violations of said order or rights accrued, liabilities incurred, or appeals taken under such order prior to the effective date hereof, said General Preference Order shall be deemed in full force and effect for the purpose of sustaining any proper suit, action, or other proceeding with respect to any such violation, right, or liability. Any appeal pending under said General Preference Order shall be considered under paragraph (k) hereof.

(n) *Communications to Department of Agriculture.* All reports required to be filed hereunder and all communications concerning this order shall, unless otherwise directed, be addressed to: Director of Food Distribution, United States Department of Agriculture, Washington, D. C., Ref.: FD-34.

(o) *Effective Date.* This order shall be effective on March 24, 1943, as of 12:01 a.m., e.w.t.

(E. O. 9280, 7 F. R. 10179)

Issued this 19th day of March, 1943.

/s/ PAUL H. APPLEBY
Acting Secretary of Agriculture

[1] 7 F. R. 10329

SOAP SIZE AND QUALITY
OPA-CPRI

(Document No. 2179)

TITLE 32—NATIONAL DEFENSE

Chapter XI—Office of Price Administration

PART 1386—SOAPS AND GLYCERINE

[Commodity Practice Regulation 1]

BAR OR PACKAGE SOAPS OR CLEANERS

In the judgment of the Price Administrator it is necessary in order to effectuate the purposes of the Emergency Price Control Act of 1942 and to prevent manipulative practices which are equivalent to or are likely to result in price increases and evasions of the General Maximum Price Regulation[1] in the sale of bar or package soaps or cleaners to prescribe and limit further changes in weight and quality of such products.

A statement of the considerations involved in the issuance of this Regulation has been issued simultaneously herewith and filed with the Division of the Federal Register.

Therefore, under the authority vested in the Price Administrator by the Emergency Price Control Act of 1942, and in accordance with Procedural Regulation No. 1[2] issued by the Office

[1] 7 F. R. 3153, 3330, 3666, 3990, 3991, 4339, 4487, 4659, 4738, 5027.
[2] 7 F. R. 971, 3663.

of Price Administration, Commodity Practices Regulation No. 1 is hereby issued.

Sec.

1386.1 Prohibition against changes in weight or quality of bar or package soaps or cleaners sold or delivered by manufacturers thereof.

1386.2 Definitions.

1386.3 Records and reports.

1386.4 Enforcement.

1386.5 Exceptions.

1386.6 Petitions for amendment.

1386.7 Applicability.

1386.8 Effective date.

AUTHORITY: §§ 1386.1 to 1386.8, inclusive, issued pursuant to Pub. Law 421, 77th Cong., 2d Sess.

§ 1386.1 *Prohibition against changes in weight or quality of bar or package soaps or cleansers sold or delivered by manufacturers thereof.* (a) On and after July 21, 1942, regardless of the terms of any contract, lease or other obligation, no manufacturer thereof may sell, offer to sell, or deliver to any person bar or package soaps or cleansers which differ in weight or quality from a bar or package soap or cleanser delivered or offered for current delivery by such manufacturer in the market area where such person is located during the thirty day period ending July 17, 1942, except as provided in paragraph (b) of this section.

(b) Notwithstanding the provisions of paragraph (a) of this section, a manufacturer may improve the quality of any bar or package soap or cleanser delivered or offered for current delivery by him during the thirty day period ending July 17, 1942, but in determining the maximum price for the improved bar or package soap or cleanser under the General Maximum Price Regulation it shall be deemed to be the same commodity as the non-improved bar or package soap or cleanser.

§ 1386.2 *Definitions.* (a) This Commodity Practices Regulation No. 1 and the terms appearing therein shall be construed as follows:

(1) "Person" includes an individual, corporation, partnership, association, any other organized group of persons, legal successor or representative of any of the foregoing, and includes the United States, any agency thereof, any other government, or any of its political subdivisions, and any agency of any of the foregoing.

(2) "Manufacturer" means a person who packages soaps or cleansers or cuts or forms or stamps the same into bars.

(3) "Soap" means the product formed by the saponification or neutralization of fats, oils, waxes, rosins, or their acids (fatty acids) with organic or inorganic bases, or any detergent composition containing such product.

(4) "Bar soap or cleanser" means the following kinds of soap or cleanser in the size or type of bar which is customarily sold to household consumers:

(i) Toilet soap.

(ii) Laundry soap.

(iii) Bar cleansers.

(5) "Package soap or cleanser" means the following kinds of soap or cleanser in the size or type of package which is customarily sold to household consumers:

(i) Granulated, powdered or sprayed soap.

(ii) Soap chips and flakes.

(iii) Washing powder.

(iv) Clansers and scouring powders.

(6) "Differ in weight" refers to a difference in marked weight in the case of package soaps or cleansers which have a marked weight or in packed weight in the case of package soaps or cleansers which have no marked weight or in cut weight in the case of bar soaps or cleansers.

(7) "Marked weight" is the net weight of the contents thereof as marked on a package of soap or cleanser which is not in bar form.

(8) "Packed weight" means the net weight of the contents of a package of soap or cleanser not in bar form immediately after packaging.

(9) "Cut weight" means the weight of a bar of soap or cleanser immediately after being cut, formed or stamped, into bars.

(10) "Differ in quality" refers to:

(i) A difference in serviceability per unit weight in the use for which the soap or cleanser is customarily intended, or

(ii) A difference in anhydrous soap content.

(11) "Improve the quality" refers to:

(i) An increase in the anhydrous soap content of a bar or package soap or cleanser, or

(ii) An increase in the serviceability per unit weight in the use for which the soap or cleanser is customarily intended.

(12) "Anhydrous soap content" means the anhydrous soap content as determined by the official methods for testing soap set out in Federal Specification P-S-536 for Soap and Soap Products; General Specifications for Sampling and Testing.

(13) "Market area" means the geographical area in which a manufacturer has delivered or offered for current delivery a particular bar or package soap or cleanser during the thirty day period ending July 17, 1942.

(b) Unless the context otherwise requires, the definitions set forth in section 302 of the Emergency Price Control Act of 1942 shall apply to other terms used in this Commodity Practices Regulation No. 1.

§ 1386.3 *Records and reports.* (a) Every manufacturer shall by September 17, 1942 prepare and file with the Office of Price Administration in Washington, D. C., a detailed description of each weight and quality of bar or package soap or cleanser delivered or offered for current delivery by him during the thirty day period ending July 17, 1942 and of the geographical area in which he delivered or offered for current delivery such bar or package soap or cleanser during said period.

(b) Every such manufacturer shall submit such reports to the Office of Price Administration and keep such other records in addition to or in place of the records required in paragraph (a) of this section as the Office of Price Administration may from time to time require.

§ 1386.4 *Enforcement.* (a) Persons violating any provision of this Commodity Practices Regulation No. 1 are subject to the criminal penalties and civil enforcement actions provided for by the Emergency Price Control Act of 1942.

(b) Persons who have evidence of any violation of this Commodity Practices Regulation No. 1 or any price schedule, regulation, or order issued by the Office of Price Administration, or of any acts or practices which constitute such a violation, are urged to communicate with the nearest District, State, Field or Regional Office of the Office of Price Administration, or its principal Office in Washington, D. C.

§ 1386.5 *Exceptions.* (a) An exception to the provisions of this Commodity Practices Regulation No. 1 may be granted to any manufacturer who can establish

(1) That compliance with the provisions of this Commodity Practice sRegulation No. 1 will cause him substantial hardship.

(2) That the granting of such exception will not lead to manipulative practices which will defeat or impair the purposes of the Emergency Price Control Act of 1942, and

(3 That the granting of such exception will not lead to evasion of the General Maximum Price Regulation.[1]

(b) Petitions for exception shall be filed in accordance with the provisions of Procedural Regulation No. 1,[2] issued by the Office of Price Administration.

§ 1386.6 *Petitions for amendment.* Persons seeking any modification of this Commodity Practices Regulation No. 1 or an adjustment or exception not provided for herein may file petitions for amendment in accordance with the provisions of Procedural Regulation No. 1[2] issued by the Office of Price Administration.

§ 1386.7 *Applicability.* (a) The provisions of this Commodity Practices Regulation No. 1 shall be applicable only to sales or deliveries of bar or package soaps or cleansers to persons in the United States, its territories and possessions, and the District of Columbia.

(b) The provisions of this Commodity Practices Regulation No. 1 shall not be applicable to sales or deliveries of bar or package soaps or cleansers to the United States or any agency thereof.

§ 1386.8 *Effective date.* This Commodity Practices Regulation No. 1 (§§ 1386.1 to 1386.8, inclusive) shall become effective July 21, 1942.

Issued this 17th day of July 1942.

LEON HENDERSON,
Administrator.

[1] Supra, note 1.
[2] Supra, note 2.

Alkali Shipping Zones

SHIPMENTS of caustic soda came under control of General Transportation Order No. T-1 on May 1, 1943. This order sets up boundary lines for thirteen zones in the United States, and prohibits shipments of tank cars and tank trucks of caustic soda across these lines without specific authorization of the WPB. Roughly the zones are as follows: (Zone 1.) The New England states and those counties in central northwestern New York state; (Zone 2.) Metropolitan New York City, including southern Connecticut and central New York counties and the northeastern metropolitan area of New Jersey; (Zone 3.) The western tip of New York state south including the northeastern counties of Pennsylvania and the northwestern counties of New Jersey, excluding the metropolitan area; (Zone 4.) Southern New Jersey, Delaware, Maryland, the District of Columbia, the counties in the northeastern half of West Virginia, that part of Pennsylvania not included in Zone 3, which is the western section of the state, the northern half of Virginia from the James River and north of and including the counties of Albemarle and Rockingham, the city of South Richmond, Virginia, and the eastern third and entire lower southern section of Ohio; (Zone 5.) The city of Nitro, West Virginia. Authorizations for shipments into this zone from 4 and 8 will be issued by the Director General of Operation; (Zone 6.) That part of Ohio not included in Zone 4 (which means western and northern Ohio), the states of Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Nebraska, North Dakota and South Dakota, Kansas City in Missouri and Kansas, and the city of St. Louis, Mo.; (Zone 7.) The city of Memphis, Tennessee. Authorization will come from the Director General of Operations for shipments into this zone from 6, 8, and 11. (Zone 8.) The southern parts of Virginia and West Virginia not included in zone 4, also excluding South Richmond, Virginia and Nitro, West Virginia, the states of Kentucky, North Carolina, South Carolina, and Tennessee, excluding the cities of Memphis, Chattanooga and Nashville, and the extreme northern section of Georgia; (Zone 9.) Chattanooga, Tennessee. Authorizations by the Director General of Operations will be forthcoming for shipments into this zone from zones 8 and 10; (Zone 10.) The states of Florida, Mississippi, Alabama and Louisiana, and that part of Georgia not included in Zone 8, which is the central and southern section of the state; (Zone 11.) The city of Nashville, Tennessee, and the states of Texas, Oklahoma, Arkansas, Missouri and Kansas, excepting the cities of St. Louis and Kansas City; (Zone 12.) The states of Montana, Idaho, Wyoming, Utah, Colorado, Arizona, New Mexico, and eastern half of the state of Nevada; (Zone 13). Washington, Oregon, California and the western half of Nevada.

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Hints on Floor Maintenance

By Richards Jarden*
Franklin Research Co.

IT is truly said that "more floors are washed away than are worn away." Wash water itself flushes out a goodly percentage of the life-giving properties of any floor. The addition of any soap or cleaning element furthers the destructive action of the water, for all soaps or cleaners are made either to increase the "wetting" ability of water or to give certain detergent action.

Read the instructions issued by any of the floor covering manufacturers (regardless of the type of floor) and you will find them worded to eliminate the excessive use of water. In most cases, you find definite words of caution against different types of soaps or cleaners. For example, you must not use an oil base soap or a solvent type of cleaner on rubber. You must not use a cleaner with high alkali content on linoleum. You should not use an abrasive type cleaner on any valuable floor surface and even when you reach the sturdy long wearing asphalt tile, you again are cautioned against certain soaps and solvents. The one-time use of an incorrect cleaner will do damage to a floor surface equivalent to a full year of traffic abuse, and the adoption of an incorrect cleaner or cleaning method over a short period of weeks can reduce the possible life of the floor covering by years.

Conserve Floors With Wax

The maintenance of a thin protective film of wax on the wearing surface will not only reduce the abuse of traffic to a minimum, but that same film of wax acts as a buffer against the abuse of water, soap and cleaners. The ease of removing the dirt from the top surface of the protective wax film, allows you to use less cleaner or soap, less elbow grease, and less time. This all adds up to less abuse to the floor surface itself and a definite conservation of time, labor, materials.

Even in those cases where a floor has been abused by improper care or neglect, wax will in many cases correct the trouble and bring the surface back to a live, healthy and fine-looking condition. I remember a linoleum floor where the long use of disinfectants, excess water, urine, etc., had resulted in a bad drying out of the floor covering. This linoleum was hard and brittle to the point that it had lost all of its resiliency. If slightly bent at a loose joint, it cracked off like so much dry putty. There seemed no answer but to lay a new floor. However, this was impossible, and it was decided instead to maintain that area with a water emulsion wax. Before the year was out, that linoleum was again in a good pliable condition. The wax had found its way down into the surface to replace the oxidized linseed oil binder that had been dissipated and had rejuvenated the linoleum.

I have seen this same thing happen to rubber. Floors full of "alligator" cracks and as hard as cement can be rejuvenated by persistent treatment with the proper floor wax. Wax not only "protects" the surface, it actually rejuvenates the flooring by replacing those gums, resins and binders which are originally built into the floor to hold together the cork, wood flour, fiber, coloring pigment, clay, etc. Thus we should learn to look upon wax maintenance not only as a labor saver but also because it saves the floor.

Economical Application of Floor Wax

It is assumed that the user has been wise in selecting a high quality wax with good slip-resisting quality, high water resistance and with a toughness of film that will assure long wear.

Today we find more buyers holding the "slip-resistance" quality important. Let us understand, then, that if the wax is truly slip-resistant that a good coating of it must be applied on the floor surface if the best "slip resistance" is to be secured. An original application of two and possibly three or four coats must be used if we are to obtain the full extent of slip resistance that is characteristic of any particular wax formula. Naturally, if the wax is itself non-slippery, then the more of it that we put on the surface the less slippery that surface should be. This contradicts the old thought of diluting wax or applying only a thin coating when one is having trouble with slip hazard.

To accomplish this original build-up of wax on the floor surface, one should apply numerous thin coats rather than undertake to apply one or two heavy coats, for like paint, wax is better if applied in a greater number of thin coatings. Saving in wax gallonage starts after the original complete application. Those who try to accomplish a saving before this operation will invariably be disappointed. First, if they try to save in initial cost per gallon, they must purchase an inferior product. Second, if they try to save by applying too thin a coat of wax, they will fail to secure the floor protection needed due to lack of "body," and will be forced to rewax so often that the labor bill will overbalance any possible saving in gallonage.

One prominent building superintendent on the eastern seaboard states that the cost of floor maintenance with wax in the average office building can be divided 85 per cent to labor and 15 per cent to materials. It is there-

* From *Soap and Sanitary Chemicals*, October, 1942.

fore apparent that we must lay out a program which conserves chiefly labor, and while considering savings in material, must not over-emphasize the 15 per cent material and overlook the 85 per cent labor.

Conserving Labor

Men who maintain floors should have the correct equipment and plenty of it. For example, no man should undertake to clean a large floor with one bucket of water because before he has cleaned a hundred square feet the water will be dirty and from that point on he will merely be distributing the dirt, not cleaning it off. The man should use two buckets, one of clean "cleaning solution" and one for dirty water. We all know that any residue of dirty cleaning material which dries back onto the floor will interfere with the working qualities of even the best waxes. Thorough rinsing ofthe surface with clear water is important—and less wax is needed on a clean surface, incidentally, than on a dirty one.

Polishing Machines

I like to speak of these machines as dry cleaning equipment, for I have seen many cases where a floor appeared to call for a damp mopping followed by another application of wax, whereas in reality all that was needed was to run a stiff brush on the machine over the surface and knock off that "sticky type" dirt which was half ground into and adhered to the top surface of the wax. A polishing machine, therefore, becomes the means of saving many coats of wax during a year's period and it is certainly a great extra saving in labor for such a "dry cleaning" of the surface can be accomplished in one third the time of damp mopping and applying new wax.

Conserving Wax

Many users fail to point out to their workmen that it is unnecessary, even unwise, to re-wax the entire surface of most floors. One of the best features of a floor wax is its ability to be applied only to the traffic lanes without showing overlapping streaks.

Make sure that workmen do not pile one coat of wax upon another in those areas that receive little or no wear. A little supervision here will save not only a large gallonage of wax and a large amount of labor insofar as the actual waxing is concerned, but it will save still further by putting off that day when because of a "build-up" of many coats of wax in unused floor areas, it will be necessary to "skin off" all of the old wax and start off with a new multiple-coat original application.

Maintenance coats of wax should be applied only in those areas where there is a showing of wear and this as a rule will mean but one-third or one-fourth of the entire area. Considerable time, labor and material can be saved by careful adherence to such a plan. There is usually considerable difficulty attached to cleaning off of unnecessary "build-up" around the edges of the room, under desks and in other protected areas. The wax on these unused areas has not been broken down by traffic and the longer it remains on the floor the higher it builds up in water resistance so that in many instances it is really a problem to remove.

Conserving Cleaner

Many a bucket of so-called dirty cleaning solution is thrown away when it still has plenty of cleaning ability left in it. Use this dirty cleaner to the extent of its full cleaning capacity, but be sure you do not allow it to dry back onto the floor surface. A good procedure here is to use a squeegee and after cleaning one section of the floor with cleaning solution, squeegee it over to the next section and merely add that amount of new and clean "cleaning solution" which is necessary. Thus all of the cleaning material is used completely, and if, after squeegeeing an area, it is rinsed with clear water, a mighty good cleaning job results.

Any cleaner must be given time really to wet the full body of dirt before it can do its best cleaning work. A drop of water standing on a pile of dust can be rolled around on top of the dust for a few seconds before it "wets" the dust and thus acts as a cleaner. This same principle holds good in the cleaning of a floor or a wall. The cleaner must be allowed completely to wet the dirt before it can do its cleaning work. By using this suggestion, a better finished cleaning job with a weaker solution of cleaning material can be done. Let the cleaning material remain on the surface in a wet condition for four or five minutes before agitation with a brush or mop. Naturally when interested only in cleaning a little dirt off the top surface of the wax, it is only necessary to damp mop. In this case, use as *little water as possible* and allow the surface to remain wet for as short a time as possible.

Salt Water Detergent

INTERIM specification 5 1D7 (INT) was issued by the Bureau of Ships, U. S. Navy Department, April 15, 1942, and has been in use since that time on bids for salt water soaps for the Navy. Detail requirements are:

Salt-water detergent, bar form, shall be a uniform mixture of substantially equal parts of a synthetic detergent and a well-made, boiled, settled kettle soap. The mixture shall be compounded by heating and mixing in a crutcher, if necessary with the addition of a small amount of water, to produce a uniform product which shall be cast into blocks. After cooling and solidifying the blocks shall be cut into bars of the desired shape and weight.

(*Turn to Page* 182)

TABLE I.—COMPOSITION

	Per cent by weight	
	Max.	*Min.*
Anhydrous, salt-free, soda soap	—	30
Anhydrous, salt-free, synthetic detergent	—	20
Moisture and matter volatile at 105° C.	25	—
Free alkali, calculated as sodium hydroxide (NaOH)	0.1	—
Matter insoluble in distilled water	0.3	—
Rosin	4.0	—
Sugar	None	—
Sodium sulphate, sodium chloride, and other neutral inorganic salts	Balance	

Specifications*

Chip Soap (P-S-566a)

Chip soap shall be a soap in chip form made from soda and fats, without rosin, as free as possible from water and all substances other than true soap, of a light uniform color, free from disagreeable odor, and suitable for laundering and other washing, cleaning and scouring processes with soft water, when the presence of alkaline salts is not desirable.

Moisture and matter volatile at 105° C. shall not exceed 10 per cent. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 4 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.2 per cent. Matter insoluble in water shall not exceed 1.0 per cent. Anhydrous soap shall be not less than 85 per cent. Titer of the mixed fatty acids prepared from the soap must be not less than 39° C.

Cake Grit Soap (P-S-571a)

Cake grit soap shall be of the following types as specified: Type A—for fine work, such as glass and enamel; Type B—for scouring and scrubbing.

Type A—

Matter volatile at 105° ±2° C. shall not exceed 4 per cent. Alkali as alkaline salts (total alkalinity of matter insoluble in alcohol), calculated as sodium carbonate (Na_2CO_3), shall not exceed 1 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 8 per cent nor more than 93 per cent. The insoluble siliceous material shall consist of not less than 90 per cent of ground feldspar. All of the insoluble siliceous material shall pass through a No. 100 sieve, and the residue retained on a No. 200 sieve shall not exceed 5 per cent. Sugar, and foreign matter shall not be present. Anhydrous soda soap shall be within 1 per cent of the difference between 100 and the sum of the matter volatile at 105° ±2° C., insoluble siliceous material, and alkali as alkaline salts. The cakes shall be well compressed and of a satisfactory degree of friability, which shall not be materially affected or lessened after immersion in or contact with water. The material shall not scratch glass or enameled surfaces. The material shall be unscented and shall be of a light gray or white color.

Type B—

Matter volatile at 105° ±2° C. shall not exceed 5 per cent. Alkali as alkaline salts (total alkalinity of matter insoluble in alcohol), calculated as sodium carbonate (Na_2CO_3), shall not exceed 3 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall not be less than 75 nor more than 85 per cent. The insoluble siliceous material shall be mainly quartz, and it all must pass through a No. 100 sieve. Sugar, and foreign matter shall not be present. Anhydrous soda soap shall be within 1 per cent of the difference between 100 and the sum of the matter volatile at 105° ±2° C., insoluble siliceous material, and alkali as alkaline salts. The cakes shall be well compressed and of a satisfactory degree of friability, which shall not be materially affected or lessened after immersion in or contact with water. The material shall be unscented and shall be of a light gray or white color.

Hand Grit Soap (P-S-576)

Hand-grit soap shall be a cake soap containing about one-third its weight of clean, finely divided insoluble siliceous matter, as free as possible from water, uncolored, unscented unless otherwise specified, thoroughly saponified, and well compressed in firm, smooth cakes.

Matter volatile at 105° C. shall not exceed 25 per cent. Deliveries which yield more than 25 per cent of volatile matter will be rejected without further test. Alkali as alkaline salts (total alkalinity of matter insoluble in alcohol), calculated as sodium carbonate

GOVERNMENT specifications on many soaps and detergents have been revised within recent months, and in many cases further changes are in prospect to fit government standards to war conditions. It is believed that the specifications listed are the latest versions as of the date of compilation of this material, but it should be emphasized that further changes may subsequently be ordered. Only the essential requirements have been extracted in our summary. Copies of the complete specifications, including details as to packing, methods of analysis, etc., are available through the U. S. Federal Specifications Board.

* General and detailed requirements as specified in the Standard Stock Catalogue of the U. S. Federal Specifications Board.

(Na_2CO_3), shall not exceed 1 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 25 nor more than 40 per cent. The insoluble siliceous material shall not yield more than 2 per cent of residue retained on a No. 100 sieve and not more than 10 per cent of residue retained on a No. 200 sieve. Rosin, sugar, and foreign matter shall not be present. Anhydrous soda soap shall be within 1 per cent of the difference between 100 and the sum of matter volatile at 105° C., insoluble siliceous material, and alkali as alkaline salts. The percentage of matter volatile at 105° C. will be computed on the basis of the soap as received, but all other constituents will be calculated on the basis of material containing 25 per cent of matter volatile at 105° C.

Laundry Chip Soap (Rosin Type) (P-S-581)

Laundry chip soap shall be a well-made, uniformly mixed soap in chip form, made from soda and fats, with no excessive proportion of rosin and a moderate amount of matter insoluble in alcohol, shall be of a uniform color, and shall be suitable for use with moderately hard water for general cleaning and laundry purposes. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on dishes or other objects after washing with a water solution of the soap and rinsing thoroughly with hot water. If desired, the odor of the material under the above conditions shall conform to the odor of a sample mutually agreed upon by buyer and seller.

The material shall conform to the following detail requirements:

	Maximum Per Cent	Minimum Per Cent
Moisture and matter volatile at 105° C.	15.0	....
Sum of free alkali or free acid, total matter insoluble in alcohol, and sodium chloride	12.0	....
Free alkali, calculated as sodium hydroxide (NaOH)	.5	....
Free acid, calculated as oleic acid	.5	....
Matter insoluble in water	1.0	....
Chloride, calculated as sodium chloride (NaCl)	1.0	....
Rosin	20.0	....
Anhydrous soap	....	72.0

Granulated Laundry Soap (Rosin Type) (P-S-583)

Laundry granulated soap shall be a well-made, uniformly mixed soap in granulated or powdered form, made from soda and fats, with no excessive proportion of rosin and a moderate amount of matter insoluble in alcohol, shall be of a uniform color, and shall be suitable for use with moderately hard water for general cleaning and laundry purposes. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on dishes or other objects after washing with a water solution of the soap and rinsing thoroughly with hot water. If desired, the odor of the material under the above conditions shall conform to the odor of a sample mutually agreed upon by buyer and seller.

The material shall conform to the quirements as shown in table above.

	Maximum Per Cent	Minimum Per Cent
Moisture and matter volatile at 105° C.	10.0	....
Sum of free alkali or free acid, total matter insoluble in alcohol, and sodium chloride	14.0	....
Free alkali, calculated as sodium hydroxide (NaOH)	.5	....
Free acid, calculated as oleic acid	.5	....
Matter insoluble in water	1.0	....
Chloride, calculated as sodium chloride (NaCl)	1.0	....
Rosin	20.0	....
Anhydrous soap	....	75.0
Residue retained on a No. 12 sieve	2.0	....

Liquid Laundry Soap (P-S-586)

Liquid soap for laundry use shall be a clear solution of pure potash (or potash and soda) soap with or without gylcerol or alcohol and containing not less than 12 per cent by weight of a volatile organic solvent or a mixture of such solvents. It shall yield a clear solution on mixing with soft water, shall quickly form a satisfactory lather, shall have no injurious effect and leave no objectionable odor on fabrics. Materials washed with this soap shall have, after drying, a soft feel and not appear more boardy or stiff than when washed with soft water.

The material shall be a clear solution, shall yield a clear, homogeneous solution on mixing with soft water, shall quickly form a satisfactory lather, and shall leave no objectionable odor on fabric. Total anhydrous soap shall be not less than the equivalent of 24 per cent potash soap. Total matter insoluble in alcohol shall not exceed 0.5 per cent. Free alkali, calculated as potassium hydroxide (KOH), shall not exced 0.05 per cent. Chloride, calculated as potassium chloride (KCl) shall not exceed 0.3 per cent. Total matter insoluble in water shall not exceed 0.1 per cent. Volatile organic solvent shall be not less than 12 per cent. All constituents shall be calculated on the basis of the original sample. Fabric washed with the liquid soap shall show no more shrinkage or felting than occurs with similar fabric washed with soft water at the same temperature. Colored materials when washed with this soap shall not fade more than when washed the same number of times at the same temperature with soft water alone.

Ordinary Bar Laundry Soap (P-S-591a)

Ordinary laundry soap shall be a well-made, uniformly mixed laundry or common soap, made from soda and fats, with no excessive proportion of rosin and a moderate amount of matter insoluble in alcohol, and shall be suit-

able for use with moderately hard water for general cleaning and laundry purposes.

Odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The materials shall not leave an objectionable odor on dishes or other objects after washing with a water solution of the soap and rinsing thoroughly with hot water. If desired, the odor of the material under the above conditions shall conform to the odor of a sample mutually agreed upon by buyer and seller. The mutually agreed upon sample shall be kept in an air-tight, closed container for comparison with samples from deliveries.

Matter volatile at 105° C. shall not exceed 36 per cent. Deliveries which yield more than 36 per cent volatile matter will be rejected without further test. The sum of free alkali or free acid, total matter insoluble in alcohol and sodium chloride, shall be not less than 2 per cent nor more than 10 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.5 per cent. Free acid, calculated as oleic acid, shall not exceed 0.5 per cent. Matter insoluble in water shall not exceed 1 per cent. Chloride calculated as sodium chloride (NaCl), shall not exceed 1.0 per cent. Rosin shall not exceed 25 per cent. Anhydrous soap shall be not less than 52 per cent. The percentage of matter volatile at 105° C. will be computed on the basis of the soap as received, but all other constituents will be calculated on the basis of material containing 36 per cent of volatile matter.

Powdered Laundry Soap (P-S-596a)

Powdered soap shall be a soap in powdered form made from soda and fats, without rosin, as free as possible from water and all substances other than true soap, of a light uniform color, free from disagreeable odor, and suitable for laundering and other washing, cleaning and scouring processes with soft water, when the presence of alkaline salts is not desirable.

Moisture and matter volatile at 105° C. shall not exceed 6 per cent. Deliveries which yield more than 6 per cent of matter volatile at 105° C. will be rejected without further test. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 4 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.2 per cent. Matter insoluble in water shall not exceed 1.0 per cent. Anhydrous soap shall be not less than 89 per cent. Titer of the mixed fatty acids prepared from the soap shall be not less than 39° C. Residue retained on a No. 12 sieve shall not exceed 1.5 per cent. The percentage of moisture and volatile matter will be computed on the basis of the soap as received, but all other constituents will be calculated on the basis of material containing 6 per cent of volatile matter.

Detail Requirements for Automobile Soaps

	Type I		Type II	
	Liquid		Paste	
	Minimum	Maximum	Minimum	Maximum
	%	%	%	%
Moisture (toluol distillation methods)	....	....	....	55
Total matter insoluble in alcohol	....	0.5	....	1.0
Free alkali, calculated as potassium hydroxide (KOH)	....	.05	....	.1
Free acid, calculated as oleic acid	....	.1	....	.2
Alkaline salts, calculated as potassium carbonate (K_2CO_3)	....	.1	....	.2
Matter insoluble in distilled water	....	.1	....	.2
Chloride, calculated as potassium chloride (KCl)	....	.3	....	.5
Unsaponified and unsaponifiable matter	....	.4	....	.8
Anhydrous soap, calculated as potash soap	20	....	43	....
Total sodium compounds, calculated as Na_2O	....	.2	....	.5
Glycerol	1.8	....	4	....
Iodine number (WIJS) of mixed fatty acids derived from the soap	100	150	100	150
Acid number of mixed fatty acids derived from the soap	195	205	195	205
Rosin	....	None	....	None
Sugar	....	None	....	None

Liquid and Paste Soap for Automobile, Floor and General Cleaning (P-S-598)

Soap for cleaning automobiles and floors and for general cleaning shall be of two types, *Type I—liquid*, and *Type II—paste*. *Type I* shall be a uniform, liquid soap made solely from whole neutral vegetable oils and potash; shall be soluble in soft water and when diluted with water shall act as a cleaner. The flash point shall be above its boiling point. It shall not contain any solvents or oils that will damage floor surfaces. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on surfaces after washing with a water solution of the soap and rinsing thoroughly with plain water.

Type II shall be a uniform gel or paste soap made solely from whole neutral vegetable oils and potash, having a yellowish-white to brownish-yellow color. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on surfaces after washing with a water solution of the soap and rinsing thoroughly with plain water. It shall dissolve readily to give a 0.15 to 0.2 per cent solution, using distilled water at 15.5 to 20° C. The solution so prepared shall yield a good suds.

The soaps shall conform to the requirements as shown in the table above:

Potash Linseed Oil Soap, Liquid and Paste, for Floor and General Cleaning (P-S-603)

Potash linseed oil soaps shall be of the following types: Type I—liquid; Type II—paste.

Type I shall be a uniform liquid soap made solely from whole neutral raw linseed oil and potash, shall be soluble in soft water and when diluted with water shall act as a cleaner. The flash point shall be above its boiling point. It shall not contain any solvents or oils that will damage floor surfaces. The odor shall not be objectionable in the soap as received or in

Detail Requirements for Potash Linseed Soap

	Type I		Type II	
	Liquid		Paste	
	Minimum	Maximum	Minimum	Maximum
	%	%	%	%
Moisture (toluol distillation method)	....	....	....	55
Total matter insoluble in alcohol	....	0.5	....	1.0
Free alkali, calculated as potassium hydroxide (KOH)	....	.05	....	.1
Free acid, calculated as oleic acid	....	.1	....	.2
Alkaline salts, calculated as potassium carbonate (K_2CO_3)	....	.1	....	.2
Matter insoluble in distilled water	....	.1	....	.2
Chloride, calculated as potassium chloride (KCl)	....	.3	....	.5
Unsaponified and unsaponifiable matter	....	.4	....	1.0
Anhydrous soap, calculated as potash soap	20	....	48	....
Total sodium compounds, calculated as NA_2O	....	.2	....	.5
Glycerol	1.8	....	4	....
Iodine number (WIJS) of mixed fatty acids derived from the soap	175	....	175	....
Acid number of mixed fatty acids derived from the soap	190	205	190	....
Rosin	....	None	....	None
Sugar	....	None	....	None

a hot solution of the soap in water. The material shall not leave an objectionable odor on surfaces after washing with plain water and rinsing thoroughly with plain water.

Type II shall be a uniform translucent, firm gel or paste soap made solely from whole neutral raw linseed oil and potash, having a yellowish-white to greenish-yellow color. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on surfaces after washing with plain water and rinsing thoroughly with plain water. The soap shall dissolve readily to give a 0.15 to 0.20 per cent solution, using distilled water at 15.5° to 20° C. The solution so prepared shall yield good suds. A solution of the soap in soft water shall act as a cleaner and shall not damage floor surfaces.

The soaps shall conform to requirements as shown in table above.

Soap Powder (P-S-606a)

Soap powder shall be a uniform mixture of soap and sodium carbonate, and/or other alkaline salts in powdered form. It shall be readily soluble in tepid water, shall contain no free caustic alkali or inert fillers, and shall be free from objectionable odor.

Anhydrous soap shall be not less than 15 per cent. Alkaline salts, calculated as sodium carbonate (Na_2CO_3) shall be not less than 30 per cent. The anhydrous soap and alkaline salts, calculated as sodium carbonate shall be not less than 55 per cent.

White Floating Toilet Soap (P-S-616a)

White floating toilet soap shall be a cake soap of good, light color, without objectionable odor, thoroughly saponified, and so prepared as to float on water.

Moisture and matter volatile at 105° C. shall not exceed 34 per cent. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 2.0 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exced 0.1 per cent. Chloride, calculated as sodium chloride (NaCl), shall not exceed 1 per cent. Matter insoluble in water shall not exceed 0.2 per cent. Anhydrous soap shall be not less than 62 per cent. Rosin, sugar, and foreign matter shall not be present. The acid number of the mixed fatty acids prepared from the soap shall be not less than 212. The percentage of matter volatile at 105° C. will be computed on the basis of the soap as received, but all other constituents will be calculated on the basis of material containing 34 per cent of volatile matter.

Liquid Toilet Soap (P-S-618a)

Liquid toilet soap shall be a clear solution of pure vegetable oil potash (or potash and soda) soap with or without glycerol or alcohol, suitably perfumed, and free from all foreign matter. It shall quickly form a satisfactory lather and have no injurious effect and leave no objectionable odor on the skin.

The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave any objectionable odor on the skin or other surfaces after washing with a water solution of the soap and rinsing thoroughly with plain water. Unless otherwise specified each bidder shall submit with his proposal a one-quart sample, placed in a screw-top glass jar, to show odor, color, and consistency. The sample so furnished shall be kept for comparison with samples from deliveries.

The material shall be a clear solution, free from objectionable odor, other than from coconut oil, and shall form a satisfactory lather. Total anhydrous soap shall be not less than the equivalent of 15 per cent potash soap. Total matter insoluble in alcohol shall not exceed 0.5 per cent. Free alkali calculated as potassium hydroxide (KOH) shall not exceed 0.05 per cent. Chloride calculated as potassium chloride (KCl) shall not exceed 0.3 per cent. More than traces of sulphates and sugar shall not be present. All constituents shall be calculated on the basis of the original sample.

Milled Toilet Soap (P-S-621a)

Milled toilet soap shall be a high grade, milled cake soap as free as possible from water, either colored or uncolored, and mildly perfumed unless otherwise specified, thoroughly saponified, well compressed in firm, smooth cakes of a size and shape specified in the contract. It should lather freely when used with cold, soft water.

Moisture and matter volatile at 105° C. shall not exceed 15 per cent. Deliveries which yield more than 15 per cent of volatile matter will be rejected without further test. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 1.7 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exced 0.1 per cent.

Matter insoluble in water shall not exceed 0.1 per cent. Unsaponified saponifiable matter shall not exceed 0.3 per cent. Anhydrous soap shall be not less than 83 per cent. Rosin, sugar and foreign matter shall not be present. The percentage of moisture and matter volatile will be computed on the basis of the soap as received, but all other constituents will be calculated on the basis of material containing 15 per cent of volatile matter.

Powdered Toilet Soap (for Dispensers) (P-S-626a)

Powdered toilet soap for use in dispensers shall be a thoroughly saponified soap in powdered form, made from soda and fats; shall be uncolored and mildly perfumed, unless otherwise specified; shall be a uniform, free-flowing, noncaking powder; and shall lather freely when used with cold soft water.

The material shall be a uniform powder and shall be freeflowing and noncaking when used in a dispenser conforming to type III or IV of Federal Specification FF-D-396. It shall lather freely when used with soft water at room temperatures. Shall be mildly perfumed, unless otherwise specified. If desired, shall conform to the odor of a sample mutually agreed upon by buyer and seller. The mutually agreed upon sample shall be kept in an airtight, closed container for comparison with samples from deliveries.

Shall be uncolored, unless otherwise specified. Matter volatile at 105° ±2° C. shall not exceed 6 per cent. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 2.0 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Matter insoluble in water shall not exceed 0.2 per cent. Anhydrous soda soap shall be not less than 91 per cent. Rosin, sugar, and foreign matter shall not be present. The material shall meet the following fineness requirements:

Retained on—	Minimum Per Cent	Maximum Per Cent
No. 12 sieve.....	—	1.5
No. 45 sieve.....	50	—
No. 100 sieve.....	90	—

Toilet Soap-Borax Compound (for Dispensers) (P-S-628)

Soap and borax compounds for use in dispensers shall be a uniform mixture of a thoroughly saponified soap and borax ($Na_2B_4O_7 \cdot 10\ H_2O$); shall be uncolored and mildly perfumed, unless otherwise specified; shall be a free-flowing, non-caking powder, when used in a dispenser conforming to Type III or IV of Fed. Spec. FF-D-396. It shall lather freely when used with soft water at room temperature. Anhydrous soda soap shall be not less than 23 per cent and not more than 27 per cent. Borax, calculated as $Na_2B_4O_7 \cdot 10\ H_2O$, shall be not less than 72 per cent and not more than 77 per cent. The pH of a 1 per cent solution by weight of the material in distilled water shall be not less than 9.0 and not more than 10.2 at 25° C., using a glass electrode. Matter insoluble in water shall not exceed 0.2 per cent. Rosin, sugar, and foreign matter shall not be present. The material shall meet the following fineness requirements.

Retained on—	Minimum Per Cent	Maximum Per Cent
No. 12 sieve.....	—	0
No. 45 sieve.....	5	—
No. 100 sieve.....	45	—

Caustic Soda for Cleaning (P-S-631a)

Caustic soda shall be of but one grade. It shall be furnished in airtight containers (13-ounce cans or drums) in flake, ground, or lump form, as specified in the invitation for bids. It shall conform to the following detail requirements:

Sodium hydroxide (NaOH) shall be not less than 95 per cent.

Carbonate, calculated as sodium carbonate (Na_2CO_3), shall be not more than 2 per cent.

Grease-Cleaning Compound, Solvent-Emulsion Type (P-C-576)

Grease-cleaning compound shall be furnished in two types, Type I, non-phenolic, and Type II, phenolic. The compound shall be a uniform liquid and shall be suitable for the purpose intended.

Type I, nonphenolic.

Flash point shall be not less than 200° F. (open cup). The compound shall have a neutralization number of not more than 8 (mg. of KOH to neutralize 1 gm. of compound). The compound shall have no free alkali. The pour point shall be not more than 35° F. The loss in weight shall be not more than 10 per cent after a 24-hour period. Shall be free from phenols. Physical and performance tests covering stability of emulsion, solubility in kerosene and in water, etc., are also provided.

Type II, phenolic

As above except that the material is to contain not less than 15 per cent and not more than 25 per cent phenols by volume, and must pass a phenol (C_6H_5OH) limitation test.

Laundry Soda (Washing Soda) (P-S-641a)

Laundry soda shall be a white uniform powder composed of sodium carbonate and sodium bicarbonate. It shall conform to the following detail requirements:

	Maximum Per Cent	Minimum Per Cent
Total alkalinity, calculated as Na_2O	45	39
Sodium bicarbonate ($NaHCO_3$)	50	35
Sodium carbonate (Na_2CO_3)	50	35
Sum of sodium carbonate and sodium bicarbonate	—	85
Matter insoluble in water.	.1	—

Mechanics' Hand Detergent (P-D-221)

Detergent for mechanics use shall be of the following types, as specified: Type I—hand grit paste soap; Type II—hand scouring powder. It shall be a uniform mixture in paste or powder form, as specified, and shall be satisfactory for removing oil, grease, paint, printing inks, and other occupational soil from the hands of automobile mechanics, machinists, and other operatives without harmful effect on the skin.

Type I — (Hand grit paste soap).

The material shall be a uniform paste. The odor shall not be objectionable. If desired, shall conform

to the odor of a sample mutually agreed upon by buyer and seller. The mutually agreed upon sample shall be kept in an airtight, closed container for comparison with samples from deliveries. Volatile matter at 105° to 110° C. shall not exceed 55 per cent. Deliveries which yield more than 55 per cent of volatile matter shall be rejected without further test. Alkaline salts, calculated as sodium carbonate (Na_2CO_3), shall not be more than 2 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.02 per cent. Free acid, calculated as oleic acid, shall not exceed 0.2 per cent. Anhydrous soap, calculated as soda soap, shall be not less than 8 per cent nor more than 16 per cent. Insoluble siliceous matter shall be not less than 25 per cent nor more than 50 per cent and shall conform to the following fineness requirements:

Retained on—	Minimum Per Cent	Maximum Per Cent
No. 40 sieve	—	0
No. 60 sieve	10	20
No. 80 sieve	30	45
No. 100 sieve	35	55
No. 200 sieve	60	—

The material shall retain the consistency of a firm paste after keeping in a closed container for 6 hours at 30° to 32° C. (86° to 89.6° F.). The material shall not deteriorate when kept in an airtight container. The percentage of matter volatile at 105° to 110° C. will be computed on the basis of the grit paste soap as received, but all other constituents will be calculated on the basis of material containing 50 per cent of matter volatile at 105° to 110° C.

Type II — (Hand scouring powder).

The material shall be a uniform, free-flowing powder. The odor shall not be objectionable. If desired shall conform to the odor of a sample mutually agreed upon by buyer and seller. The mutually agreed upon sample shall be kept in an airtight, closed container for comparison with samples from deliveries. Volatile matter at 105° to 110° C. shall not exceed 5 per cent. Deliveries which yield more than 5 per cent of volatile matter shall be rejected without further test. Alkaline salts, calculated as sodium carbonate (Na_2CO_3), shall be not less than 2 per cent nor more than 5 per cent. The alkaline salts shall consist of borax, sodium carbonate or a mixture thereof. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Free acid, calculated as oleic acid, shall not exceed 0.2 per cent. Anhydrous soap, calculated as soda soap, shall be not less than 17 per cent. Insoluble siliceous matter shall be not less than 60 per cent nor more than 76 per cent and shall conform to the following fineness requirements:

Retained on	Maximum Per Cent
No. 60 sieve	5
No. 100 sieve	30
No. 200 sieve	60

Rosin or sugar shall not be present. All constituents shall be reported on the basis of the sample as received.

Special Detergents (P-D-236)

Detergents for aluminum-ware shall be of the following types and classes:

Type I. Detergent for use in mechanical dishwashing machines.

Type II. Detergent for manual cleaning.

Class A. Non-abrasive cleaner.

Class B. Abrasive cleaner.

The material used in Type I detergent shall be suitable for use in mechanical dishwashing machines and shall be substantially uniform in appearance throughout. It shall be free from objectionable odor, and shall dissolve readily in tepid water. Cleaner may be supplied in either powder, granule, chip, or liquid form provided it conforms to the detailed requirements.

The material used in Type II, Class A non-abrasive cleaner shall be suitable for any type of manual washing where abrasiveness is not desired, and shall be substantially uniform in appearance throughout. It shall be free from objectionable odor, and shall dissolve readily in tepid water. Cleaner may be supplied in either powder, granule, chip, or liquid form provided it conforms to the detailed requirements.

The material used in Class B abrasive cleaner shall be suitable for any uses requiring a manual cleaner where soil adheres too tenaciously for non-abrasive cleaners. It may be supplied in the form of a liquid, a solid, a paste, or a combination of any two of the above. Combinations of metal wools and soaps may be supplied. The cleaner shall be free from objectionable odor and from poisonous or irritant chemicals.

Each bidder shall submit with his proposal for Type I and Type II. Class A, materials a sample of the material that he proposes to furnish. Each sample shall be labeled to show the amount recommended for softening 10 gallons of water containing 10 grains (171 p.p.m.) of hardness, calculated as $CaCO_3$, and may be used by the inspector or purchasing officer in the recommended proportions for determining the performance or cleaning ability of the material.

Samples from deliveries shall be subjected to similar tests. If specified by the purchasing officer, the material, when used in the proportions recommended by the bidder, shall be at least equal in cleaning ability to a standard sample furnished, or indicated, by the purchasing officer.

Type I. Detergent for use in mechanical dishwashing machines shall conform to the following detail requirements: *Turbidity*—When tested by the method described in paragraph F-2b (1), (See complete specifications) the weight of the precipitate obtained shall be less than 20 mg. for 250 ml of solution. *Foaming*—When tested by the method described in paragraph F-2c, no foam or suds shall be detected. *Corrosion*—when tested by the method described in paragraph F-2f (1), the detergent solution shall be without visible action on bare or anodic oxide-coated aluminum alloy. *Water-Softening Capacity*—A suds which is stable for not less than 5 minutes shall be formed when the material is tested as described in paragraph F-2d. *Hydrogen Ion Content and Buffer Index*—When tested by the method outlined in paragraph F-2g, the detergent solution shall have an initial pH of not less than 10.0, and shall have a pH of not less than 9.0 after the addition of the specified amount of hydrochloric acid solution. *Cleaning Ability.*—The material

shall clean satisfactorily when tested as indicated in paragraph F-2a. The relative cost of the detergent shall be determined from the product of the delivered price per pound of the detergent and the number of pounds of the detergent required to treat 1000 gallons of water containing 10 grains (171 p.p.m.) per gallon of hardness, calculated as $CaCO_3$. The amount of detergent used in this computation shall be that required to give the concentration used in paragraphs F-2b (1) and F-2d of this specification.

Type II, Class A. Non-Abrasive Cleaner shall conform to the following detail requirements:

Turbidity — The turbidity of the cleaner solution shall conform to the test described in paragraph F-2b (2). (See complete Specification.) *Corrosion*—When tested by the method described in paragraph F-2f (2), the cleaner solution shall be without visible action on bare or anodic oxide-coated aluminum alloy. *Water-Softening Capacity and Soap*—A suds which is stable for not less than 5 minutes shall be formed when the material is tested as described in paragraph F-2e. *Hydrogen Ion Content*—The pH of a 1 per cent solution by weight of the cleaner in distilled water shall not exceed 10.5 when measured as indicated in paragraph F-2h. *Cleaning Ability.* —The material shall clean satisfactorily when tested as indicated in paragraph F-2a. *Relative Cost*—The relative cost of the cleaner shall be determined from the product of the delivered price per pound of the cleaner and the number of pounds of the cleaner required to treat 1000 gallons of water containing 10 grains (171 p.p.m.) per gallon of hardness, calculated as $CaCO_3$. The amount of cleaner used in this computation shall be that required to give the concentration used in paragraphs F-2b (2) and F-2e of this specification.

Type II, Class B. Abrasive Cleaner shall conform to the following detail requirements: *Abrasion*—When tested by the method described in paragraph F-2i (See complete Specification) the cleaner shall produce no undesirable scratching. *Corrosion*—When tested by the method described in paragraph F-2f (3), the cleaner shall be without visible action on bare or anodic oxide-coated aluminum alloy. *Rinsibility*—When tested by the method described in paragraph F-2j, the cleaner shall be removed completely from a glass plate. *Cleaning Ability*—The material shall clean satisfactorily when tested as indicated in paragraph F-2a.

Sweeping Compound (P-C-591a)

Sweeping compound shall consist of a uniform mixture of the materials as specified for each type and shall be artificially colored or uncolored as specified by the purchaser. If desired, shall conform to the color of a sample mutually agreed upon by buyer and seller.

Type I — (Mineral-oil compound).

Odor shall not be objectionable. If desired shall conform to the odor of a sample mutually agreed upon by buyer and seller. The mutually agreed upon sample shall be kept in an airtight, closed container for comparision with samples from deliveries. The material shall, on use, not stain flooring or adjacent surfaces. The material shall not give off flammable vapors when tested according to section F-2b. Material not meeting the test for flammable vapors will be rejected without further test. Water (matter volatile at 105-110° C.) shall be not more than 10 per cent by weight. Refined mineral oil (such as paraffin oil) shall be not less than 15 per cent and not more than 20 per cent by weight. Clean, fine, sharp sand or feldspar sand shall be not less than 35 per cent and not more than 50 per cent by weight. Not more than 1 per cent of sand shall be retained on a No. 20 sieve when tested according to section F-2j. Fatty oils shall not be present. The remainder shall be finely ground sawdust. Not more than 1 per cent of sawdust shall be retained on a No. 8 sieve when tested according to section F-2j.

Type II — (Water-wax-emulsion compound).

Odor shall not be objectionable. If desired shall conform to the odor of a sample mutually agreed upon by buyer and seller. The mutually agreed upon sample shall be kept in an airtight, closed container for comparison with samples from deliveries. The material shall not stain flooring surfaces on which it may be used. The material shall not give off flammable vapors when tested according to section F-2b. Material not meeting the test for flammable vapors will be rejected without further test. Water (matter volatile at 105-110° C.) shall be not more than 12 per cent by weight. Clean, fine, sharp sand, or feldspar sand shall be not less than 60 per cent and not more than 70 per cent by weight. Not more than 1 per cent of sand shall be retained on a No. 20 sieve when tested according to section F-2j. Finely ground sawdust shall be not less than 5 per cent and not more than 10 per cent by weight. Not more than 1 per cent of sawdust shall be retained on a No. 8 sieve when tested according to section F-2j. The remainder shall be waxes and emulsifying agents.

Type III — (Cottonseed hull bran-mineral oil).

Odor shall not be objectionable. If specified, the compound shall conform to the odor of a sample mutually agreed upon between buyer and seller. The mutually agreed upon sample shall be kept in an air-tight, closed container for comparison with samples from deliveries. The material shall not stain floors. It shall not give off flammable vapors. Volatile matter at 105° to 110° C. shall not be more than 10 per cent by weight. Refined mineral oil (such as paraffin oil) shall be not less than 3.5 per cent nor more than 4.5 per cent by weight, for class 1; not less than 5.5 per cent nor more than 6.5 per cent by weight for class 2; not less than 7.5 per cent nor more than 8.5 per cent by weight for class 3. The remainder of the compound shall consist of cottonseed hull bran. The cottonseed hull bran shall be of such fineness that not more than 1 per cent, by weight, shall be retained on a No. 8 sieve. Fatty oils shall not be present.

Liquid Automobile Polish (P-P-546)

Shall be suitable for use on lacquer, baked enamel and synthetic

enamel finishes. Shall have no objectionable odor. Shall be a stable aqueous emulsion containing a suitable abrasive in suspension. The polish shall be a free-flowing fluid that can readily be applied with a cotton cloth and shall spread easily. Non-volatile matter, total solids, shall be not less than 25 per cent by weight. Ash content, based on non-volatile, shall be not less than 35 per cent nor more than 50 per cent by weight. No free caustic alkali. Neutralization number shall be not more than 5. All of the material shall pass through a No. 200 sieve, and not less than 95 per cent, based on ash content, shall pass through a No. 325 sieve. Volatile matter shall be essentially water. Physical and performance tests are also specified.

Liquid Furniture Polish (P-P-552)

The polish shall be free from abrasives and suitable for use on finishes on wood and metal furniture. It shall have no objectionable odor. It shall be a stable colloidal emulsion of oil in water. It shall be a free-flowing fluid that can readily be applied with a cotton cloth and easily spread. Non-volatile matter shall be not less than 40 per cent by weight, and shall be essentially a well-refined petroleum oil. Ash content, based on non-volatile matter, shall be not more than 1 per cent by weight. Volatile matter shall be essentially water. No free caustic alkali shall be present. The saponification number shall be not more than 30. Physical and performance tests are also specified.

Metal Polish (P-P-556a)

Metal polish shall be of the following types:

Type I. Powder.

Type II. Liquid.

Type III. Paste.

Metal polish of each type shall be of but one grade. It shall be a product, with or without a finely divided abrasive, suitable for the removal of tarnish from brass, nickel, copper, and other metals and capable of producing a luster thereon.

All types shall give good protection to the polished surface against tarnishing influences, and shall be so constituted and prepared that, by reason of application and polishing, they—

(1) Shall not scratch metals.

(2) Shall not leave the metal discolored or caked with abrasive material.

(3) Shall not be detrimental in any manner to metals.

(4) Shall not show any unnecessary caking of type I or III polish in the containers. The abrasive material in liquid (Type II) polish, shall show no caking in the container, which cannot be readily put into suspension by thoroughly shaking the containers. The abrasive material shall be of such particle size that 100 per cent will pass through a No. 200 sieve.

Metal polish shall be free from acids, cyanide of potassium or other cyanides, grit, or other ingredients having detrimental effects on metals. Shall clean quickly, leaving a bright polished surface, with a full luster for the material being polished. When so specified the tarnish-removing and luster-producing properties shall be equal in quality to those of a standard sample furnished or approved by the purchaser. The polished surface shall remain free from corrosion or discoloration for a period of at least 24 hours.

Polish shall have good keeping qualities and be guaranteed for 1 year from the date of actual receipt at point of delivery. During the guaranty period the successful bidder shall replace without cost any metal polish which through deterioration, evaporation, caking in the container, or other causes, becomes unfit for use. Replacement metal polish shall also be guaranteed for 1 year from date of receipt. The metal polish will be stored in original, unopened shipping containers, not subjected to freezing temperature or to excessive artificial heat. The amount of volatile matter, at 105° to 107° C., in either type II or III polish, shall not exceed 70 per cent by weight, of the polish. The flammability of the liquid contents of types II and III polishes shall be not less than 39° C.

Silver Polish (P-P-571b)

Silver polish shall be of the following types:

Type I. Liquid.

Type II. Paste.

Type II. Powder.

Silver polish shall be of but one grade, and shall consist solely of finely ground diatomaceous or infusorial earth, prepared as a powder (Type III) or suitably compounded with a neutral soap, to produce a liquid (Type I) or a paste (Type II).

All types of silver polish shall have—

(a) Good tarnish-removing properties.

(b) Good luster-producing properties and shall be so constituted and prepared that by reason of application and polishing, they—

(1) Shall not scratch silverware.

(2) Shall not leave silver discolored.

(3) Shall not leave any residue (which will cause discoloration) not removable by washing in warm soapy water.

(4) Shall not show any unnecessary caking of Type II or III polish in the containers. The abrasive material in liquid (Type I) polish, shall show no caking in the container which cannot be readily put into suspension by thoroughly shaking the containers.

The diatomaceous or infusorial earth in all types of silver polish shall be of such particle size that 100 per cent will pass through a No. 200 sieve.

Silver polish shall be free from acids or cyanides. Shall clean quickly leaving a bright polished surface, with a full luster for the material being polished. It shall have good keeping qualities and be guaranteed for 1 year from the date of actual receipt at point of delivery. During the guaranty period the successful bidder shall replace, without cost any silver polish which through deterioration, evaporation, caking in the container or other causes, becomes unfit for use. Replacement silver polish shall also be guaranteed for 1 year from date of receipt. The silver polish will be stored in original unopened shipping containers not subjected to freezing temperature or to excessive artificial heat. The amount of volatile matter, at 105° to

107° C., in either Type I or II polish, shall not exceed 70 per cent by weight, of the polish. The flammability of the liquid contents of Types I and II polishes shall be not less than 39° C.

Stove Polish (P-P-576)

Stove polish shall produce a deep, lustrous black color when applied as directed by the manufacturer. It shall produce no odors upon burning and shall produce a durable coating that will not readily be burned off.

Type I.—Polish, stove, liquid, shall be of such consistency that the addition of a fluid will not be necessary in order to make it free-flowing. The vehicle of the polish shall be a non-inflammable liquid.

Type II.—Polish, stove, paste, shall be non-inflammable and shall be of such consistency that it can be readily applied.

Type III.—Polish, stove, powder, shall readily form a paste with water, and shall be non-inflammable.

Type IV.—Polish, stove, cake, shall readily disintegrate in water and form a paste and shall be non-inflammable.

Scouring Powder for Floors (P-P-591)

Scouring powder for floors shall be of the following types, as specified: Type A—for fine marble floors; Type B—for tile or ceramic and terrazzo floors; Type C—soap scouring compound.

Type A—(For fine marble floors).

Matter volatile at 105° to 110° C. shall not exceed 10 per cent. Deliveries which yield more than 10 per cent of volatile matter shall be rejected without further test. The sum of sodium carbonate (Na_2CO_3) and anhydrous soap shall not exceed 7 per cent nor be less than 2 per cent. Free alkali, calculated as sodium hydroxide (NaOH) shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 85 per cent nor more than 95 per cent. All of the insoluble siliceous material shall pass through a No. 100 sieve, and the residue retained on a No. 200 sieve shall not exceed 5 per cent. The material shall not scratch nor discolor marble. The material shall be a uniform powder, shall be unscented, and shall be of a light gray or white color.

Type B—(For tile or ceramic and terrazzo floors).

Matter volatile at 105° to 110° C. shall not exceed 10 per cent. Deliveries which yield more than 10 per cent of volatile matter shall be rejected without further test. The sum of sodium carbonate (Na_2CO_3) and anhydrous soap shall not be less than 2 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 80 per cent nor more than 95 per cent. The insoluble siliceous material shall not yield more than 1 per cent of residue retained on a No. 60 sieve and not more than 10 per cent of residue retained on a No. 80 sieve. The material shall be a uniform powder, shall be unscented, and shall be of a light-gray or white color.

Type C—(Soap scouring compound).

Matter volatile at 105° to 110° C. shall not exceed 6 per cent. Deliveries which yield more than 6 per cent of volatile matter shall be rejected without further test. Carbonated alkali, calculated as sodium carbonate (Na_2CO_3) shall not be less than 6 per cent nor more than 20 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Anhydrous soap shall be not less than 3 per cent nor more than 10 per cent. Insoluble siliceous material shall be not less than 60 per cent nor more than 90 per cent. The insoluble siliceous material shall not yield more than 1 per cent of residue retained on a No. 60 sieve and not more than 10 per cent of residue retained on a No. 80 sieve. The material shall be a uniform powder, shall be unscented, and shall be light-gray or white in color.

Scouring Powder for Glass (P-P-596a)

Shall be a fine, uniform powder, and shall be suitable for cleaning highly polished glass surfaces which must transmit light efficiently, such as cabin windows and windshields of aircraft.

The material shall clean glass surfaces satisfactorily without scratching the glass or leaving an oily or other film on the surface. The material shall be a uniform, free-flowing powder, shall be scented or unscented, and shall be white or light gray in color. Matter volatile at 105° ±2° C. shall not exceed 4 per cent. Alkali as alkaline salts (total alkalinity of matter insoluble in alcohol), calculated as sodium carbonate (Na_2CO_3), shall not exceed 5 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 85 per cent nor more than 93 per cent, and shall consist of ground feldspar or other insoluble siliceous abrasive that will not scratch highly polished glass surfaces. All of the insoluble siliceous material shall pass through a No. 200 sieve. Rosin, sugar, and foreign matter shall not be present. Anhydrous soda soap shall be not less than 4 per cent and shall be within 1 per cent of the difference between 100 and the sum of the matter volatile at 105° ±2° C., insoluble siliceous material, and alkali as alkaline salts.

Technical Trisodium Phosphate (O-T-671a)

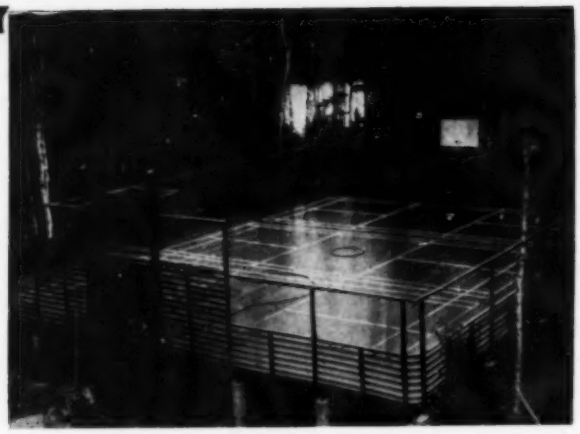
Technical trisodium phosphate shall be a white, uniform product and may be either granular, flake, or crystalline.

It shall contain not less than 98 per cent of trisodium phosphate calculated as $Na_3PO_4.12H_2O$, from the total phosphoric anhydride (P_2O_5). It shall conform to the following detail requirements:

	Minimum Per Cent	Maximum Per Cent
Trisodium phosphate, calculated as $Na_3PO_4.12H_2O$, from total P_2O_5	98	—
Total alkalinity to methyl orange, calculated as Na_2O	16	19
Phosphoric anhydride (P_2O_5)	18.3	—
Matter insoluble in water	—	0.1

Sodium Fluoride (O-S-601)

Sodium fluoride shall be a good grade commercial product in the form



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of a uniform, fine, dry, powder, suitable for dusting, free from lumps or gritty material and practically free from matter insoluble in water. It shall contain not less than 90 per cent of sodium fluoride. NaF, the remaining 10 per cent to consist of the usual impurities in a good grade of commercial sodium fluoride, such as sodium silico-fluoride, sodium bifluoride, sodium carbonate, sodium chloride, sodium sulfate and added dye. It shall be colored by incorporating with it a suitable organic dye to produce a color ranging from "Pale Nile Blue" to "Nile Blue" as designated by Ridgeway's Color Standards.

Soda Ash (O-S-571a)

Soda ash shall be of the following types, as specified:

Type I. 58% ordinary or light.
Type II. 58% extra-light.
Type III. 58% dense.

Soda ash shall be a high-grade anhydrous sodium carbonate in powdered form and shall be of the type specified by the purchaser. It shall conform to the following detail requirements for each type as indicated:

Chemical composition — Soda ash, Types I. II, and III, after drying for 1 hour at 150° to 155°C. shall conform to the following requirements as to chemical composition:

	Per Cent
Total alkalinity calculated as Na_2CO_3, minimum	99.2
Sodium bicarbonate ($NaHCO_3$), maximum	.5
Matter insoluble in water, maximum	.25

Loss in Weight at 150° to 155° C.—The loss in weight on heating about 2g, accurately weighed, of the material (Types I, II, or III) as received for 1 hour at 150° to 155° C. shall not exceed the following limits:

	Per Cent
(a) If sample is taken at manufacturer's work, maximum	1
(b) If sample is taken elsewhere, maximum	4

Volume—Thirty grams of the soda ash as received shall have an apparent volume in milliliters for each type indicated, as follows:

	Minimum	Maximum
Type I, light	50 ml.	65 ml.
Type II, extra-light	75	95
Type III, dense	25	35

Liquid Insecticide (Fly Spray) (O-I-541)

The insecticide shall not cause irritation to men nor be poisonous to man when applied in the usual manner. It shall have no greater detrimental action or metal or paint surface than a specified test solvent. It shall have no objectionable odor. It shall be formulated from a petroleum distillate base, free from kerosene odor and practically free from all odor, shall be clear and free from suspended matter and shall contain active ingredients so that it will test not more than 2 per cent below the O.T.I. in average percentage knockdown and at least 16 per cent above the O.T.I. in average percentage kill.

Initial boiling point shall not be below 350° F. and end point not above 530° F. Flash point shall be not less than 125° F. (closed cup). No residual odor shall be present, under a specified test. The product shall meet specified test for staining properties and corrosion.

Liquid Insecticide (Household) (O-I-546)

The specification follows closely along the lines of the specification for O-I-541, with an addition requirement as follows, covering minimum pyrethrin content. "There shall be not less than 0.10 gram of Pyrethrin I with the normally accompanying amount of Pyrethrin II in 100 ml. of the liquid insecticide. Any additional ingredients which when incorporated in the product will comply with the requirements of this specification may be used to bring the strength of the product up to the performance requirements."

Insect Powder (O-P-571)

Insect powder shall consist of the powdered flower heads of Chrysanthemum (Pyrethrum) cinerariaefolium (Trev. Bocc.). It shall be a product resulting from the reduction to an impalpable powder of insect flower heads of the species named and free from added stems and other adulterants. It shall be made of flowers that have been properly harvested and cured so as to retain the maximum insecticidal efficiency and are free from mold, and the powder shall have the characteristic color and odor. It shall not contain insect flower stems in excess of the amount occurring attached to flowers as harvested, and in no case in excess of 5 per cent. It shall not contain more than 2 per cent of ash insoluble in dilute hydrochloric acid.

Floor Wax (P-W-158)

The product shall dry to a film that polishes easily to a hard lustrous flexible surface. It shall not be so highly colored as to stain the surface; and shall dry within 45 minutes to a semitransparent non-tacky film which shall show no signs of whiteness. Floor wax shall consist essentially of blended waxes in a volatile organic solvent. It shall be free from rosin.

Type I (liquid)—Shall be a heavy bodied liquid mixture of suitable consistency to permit freedom of application at 20° to 25° C. There shall be no appreciable settling of the suspended material. The liquid wax shall be smooth and shall be free from hard particles and granules. There shall be not less than 11 per cent, by weight, of non-volatile matter in the liquid wax. The nonvolatile matter shall meet the following requirements:

	Min.	Max.
Softening point	71°C.	—
Acid value	—	8
Saponification value	20	70
Ash content, per cent	—	0.5

The vehicle shall consist of turpentine or volatile petroleum distillates, or any mixture thereof. The flash point of the volatile solvent shall be not less than 28° C. (closed cup). Physical and performance tests are also provided.

Type II (paste).—Shall be a semi-solid material at 20° to 25° C. There shall be no separation of liquid from paste. The paste shall be smooth and shall be free from hard particles and granules. There shall be not less than 20 per cent, by weight, of nonvolatile matter in the paste wax. The nonvolatile material shall meet the following requirements:

	Min.	Max.
Softening point	71°C.	—
Acid value	—	8
Saponification value	20	70
Ash content, per cent	—	0.5

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The vehicle shall consist of turpentine or volatile petroleum distillates, or any mixture thereof. The flash point of the volatile solvent shall be not less than 28° C. (closed cup). Physical and performance tests are also provided.

Water Emulsion Floor Wax (P-W-151a)

The floor wax shall dry to a non-tacky, lustrous finish without rubbing, buffing, or polishing. The film produced shall adhere firmly to the surface without checking, cracking, or peeling and shall be transparent and practically colorless. The floor wax shall be suitable for use on sealed floors and flooring. It shall have no objectionable odor. It shall be a stable aqueous colloidal emulsion of waxes and resins. The emulsion shall be a free-flowing fluid that can readily be applied with an applicator such as lamb's wool, cotton cloth, or a mop to spread easily and uniformly. The film so applied shall dry to a lustrous finish.

The floor wax shall meet the following requirements:

Nonvolatile matter (total solids).—Shall be not less than 12 per cent.

Wax content and softening point.—The wax content of the total solids shall be not less than 65 per cent, by weight, and shall have a softening point of not less than 77° C.

Ash content (based on nonvolatile matter content).—Shall not exceed 3.5 per cent.

Free caustic alkali—None.

Volatile solvents.—Shall be free from petroleum distillates and other organic volatile solvents.

Dilution properties.—Shall be capable of dilution in any proportion with distilled water without breaking the emulsion.

Physical and performance tests are also provided.

Wood and Cork Floor Sealers (TT-S-176a)

Floor sealers shall be furnished in one grade and two classes for use on wood and cork floors as follows: Class 1—minimum nonvolatile content 40 per cent; Class 2—minimum nonvolatile content 25 per cent. The manufacturer is given wide latitude in the selection of raw materials and processes of manufacture, provided that the sealer produced meets the requirements and tests described in this specification.

When applied in accordance with directions the product shall satisfactorily seal the pores of the flooring by absorption, leaving no apparent surface film and shall provide a satisfactory foundation for a finishing material such as varnish, liquid or paste wax, or water-emulsion wax. Unless otherwise specified, floor sealer shall be furnished "natural" in color. Floor sealer shall have sufficient fluidity to permit application with a bristle brush or lamb's wool mop.

Both classes of sealers shall be nonpigmented materials and shall be capable of being thinned with turpentine or mineral spirits. The respective sealers shall meet the following requirements: *Nonvolatile matter*—Class 1, not less than 40 per cent; Class 2, not less than 25 per cent. *Set to touch*—in not less than 1 hour and not more than 3 hours. *Dry, hard and tough*—in not more than 7 hours. *Water test*—The sealer shall meet specified cold water and boiling water immersion tests.

Toughness—Shall pass a 50 per cent Kauri reduction test at 25° C. (77° F.). *Flash point*—Shall be not below 30° C. (86° F.). (Closed-cup.)

Viscosity at 25° C.—Class 1, not more than 0.50 poise; Class 2, not more than 0.220 poise.

Skinning—Shall be negligible when received and after 48 hours in a tightly closed half-filled container.

Odor—The odor in the can, during drying, and/or after drying shall not be abnormally offensive or disagreeable.

Performance tests are also specified.

Floor Sealer (Lacquer Type) (TT-S-171)

The manufacturer is given wide latitude in the selection of raw material and processes of manufacture, provided that the sealer produced meets the requirements and tests. The product, when applied in accordance with directions shall satisfactorily seal the pores of the wood leaving the wood surface in such condition as to provide a satisfactory foundation for a finishing material such as varnish, liquid or paste wax or water-emulsion wax. It shall be "natural" in color and of sufficient fluidity to permit application with a bristle brush or lamb's wool mop.

The floor sealer shall be a clear liquid free from sediment or suspended matter and shall be of such fluidity that no further thinning will be required. It shall meet the following requirements:

Nonvolatile matter.—Not less than 14 per cent.

Set-to-touch. In not more than 15 minutes.

Dry hard and tough.—In not more than 3 hours.

Nitrocellulose.—Not less than 20 per cent by weight of the nonvolatile content.

Toughness.—Air-dried film on metal shall withstand rapid bending over a rod 3 mm. (⅛ inch) in diameter.

Viscosity. — Not more than 0.220 poise.

Performance tests are also specified.

Shaving Cream and Soap (FFF-C-641)

Shaving soap and cream shall be of the following types and classes:

Type I. Soap:
- Class (A)—Cakes.
- Class (B)—Stick.
- Class (C)—Powder.

Type II. Cream:
- Class (A)—Lather cream.
- Class (B)—Brushless cream.

Shaving soaps, Type I, shall be high-grade products free of caustic alkalinity that yield a heavy, creamy lather that will remain moist upon the face until the shaving is completed. In the case of Class B (stick), the soap shall adhere to the face when the stick is moistened and rubbed thereon. In the case of class C (powder), the material shall be free-flowing and shall not cake in the container.

Shaving cream—Class A, shall be a soft, uniform cream or paste

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free from free alkali. It shall be of such consistency that it will not flow from the tube without pressure, not require undue pressure to extrude it, and not lose its form when extruded from the tube. It shall distribute well into the bristles of a shaving brush and shall yield a heavy, creamy lather that will remain moist upon the face until the shaving is completed.

Brushless cream — Class B shall be a soft, uniform cream or paste free from free alkali. It shall remain soft in the tube and shall spread easily.

Type I. Shaving soap, Classes A, B, and C—

Color—shall be as specified by the purchaser. *Odor*—shall be pleasant and shall be as specified by the purchaser. *Lathering quality*—shall be satisfactory. Shall conform to the following test:

Shake 100 ml of a 0.2 per cent (based on the nonvolatile matter) solution of the soap (Type I, classes, A, B, and C and Type II, class A) in distilled water at room temperature in a stoppered, 200-ml graduated cylinder 30 times in 15 seconds, and let stand at room temperature for 1 hour. The volume of foam above the liquid shall extend to the top of the cylinder and shall not decrease more than 10 per cent of its original volume in 1 hour.

Caking (Class C only)—The material shall be free-flowing and shall not cake in a closed container at room temperature.

Type II. Shaving cream. Classes A and B—

Color—shall be as specified by the purchaser. *Odor*—shall be pleasant and shall be as specified by the purchaser. *Consistency*—shall be as stated above. When the packed tubes are kept at a temperature of 32° C. (90° F.) for 24 hours and then at a temperature of 15° C. (59° F.) for 24 hours, the material at the end of each 24-hour period shall on the application of slight pressure extrude from the tube as a smooth mass without any notable change in consistency and without any hardening or separation of the ingredients.

The containers shall be the usual collapsible tube type having rustproof caps for Class A, or collapsible tubes or jars for Class B. The container including the cap shall not be attacked, chemically, by the shaving cream. There shall be no discoloration of the shaving cream in storage and the tubes shall be constructed in such manner as will prevent the closed end from opening when pressure is applied to extrude the cream for use. Shaving cream that becomes discolored or that chemically attacks containers or caps while in storage during a period of 18 months after delivery shall be replaced without cost. *Lathering quality (Class A only)*—shall be satisfactory. Shall conform to the test described above.

Type I. Shaving soap, Classes A, B, and C—shall conform to the detail requirements shown in the accompanying table.

TYPE I	Classes A and B cake and stick		Class C powder	
	Min.	Max.	Min.	Max.
	Per Cent	Per Cent	Per Cent	Per Cent
Matter volatile at 105° C.	—	10	—	2
Matter insoluble in hot 95 per cent ethyl alcohol	—	.8	—	.8
Free alkali	—	None	—	None
Free fatty acids (calculated as stearic acid)	—	1.0	—	1.0
Matter insoluble in hot distilled water	—	.4	—	.4
Anhydrous soap (calculated as potash soap)	87	—	96	—
Amount passing a No. 20 sieve	—	—	100	—

TYPE II	Class A lather cream		Class B brushless cream	
	Min.	Max.	Min.	Max.
	Per Cent	Per Cent	Per Cent	Per Cent
Moisture (xylol distillation method)	—	50	—	70
Matter insoluble in hot 95 per cent ethyl alcohol	—	.3	—	—
Free alkali	—	None	—	None
Free fatty acid (calculated as stearic acid)	—	6.5	15	—
Matter insoluble in hot distilled water	—	.3	—	—
Anhydrous soap (calculated as potash soap)	40	—	—	—

The percentage of volatile matter shall be computed, and reported on the soap as received. The percentages of all other constituents shall be calculated and reported on an assumed volatile matter content of 10 per cent for Classes A and B. and of 2 per cent for Class C.

Type II. Shaving cream, Classes A and B—shall conform to the detail requirements shown in the accompanying table.

The percentage of moisture shall be computed, and reported on the shaving cream as received. The percentages of all other constituents shall be calculated and reported on an assumed moisture content of 50 per cent for Class A, and 70 per cent for Class B.

Cleaning Compound (P-C-565) Soap—Abrasive Type for painted surfaces

The product is to be without objectionable odor, and not harmful to the hands. The seller must label each container with directions for use. The product must be capable of being applied either with a damp cloth or sponge. It is to be a uniform soft paste, meeting the following requirements.

Matter volatile at 105°C. shall not exceed 65% by weight. It shall contain not more than 0.1% by weight of free alkali calculated as NaOH. It shall contain not more than 0.5% by weight free acid calculated as oleic acid. Alkaline salts calculated as Na_2CO_3 shall not exceed 5% by weight. Insoluble siliceous matter shall not be less than 25% nor more than 50% by weight. All of the insoluble siliceous matter shall pass through a No. 80 sieve; and not more than 15% shall be retained on a No. 200 sieve. Anhydrous soap shall be not less than 3.5% by weight.

A special test is provided for determination of abrasive properties. A thin film of the compound is spread over a clear microscopic slide. Another slide is placed over the film and the two slides pressed together, using a slight pressure, and rubbing one slide over the other with a rotary motion. The slides when wiped clean of the compound shall not be scratched.

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When You Order DISINFECTANTS

Specify Baird's *Certified* DISINFECTANTS!!

Certified Killing Power

Every lot of disinfectant is checked for its Germicidal value in our own and commercial laboratories. Each shipment is plainly marked with the phenol coefficient and inert ingredient statement.

Certified Uniformity

Raw materials are constantly checked for uniformity to *insure uniformity* in the finished disinfectant. Color, odor, viscosity, emulsion and strength remain constant—these disinfectants are "tops" in their field.

Certified Stability

To insure stability, these disinfectants are made from the finest raw materials, manufactured into finished products under expert trained supervision and tested time and time again so that you and your customers in turn get the finest germicides.

SYNTHETIC PHENOL GERMICIDES
PINE OIL DISINFECTANTS
COAL TAR DISINFECTANTS
CRESYLIC DISINFECTANTS

•

BAC-TROL

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CRESYLIC ACIDS CREOSOTE OILS
HOUSEHOLD INSECTICIDE

TO THE WHOLESALE TRADE ONLY

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N.A.I.D.M. SPECIFICATIONS

Official Specifications of the National Association of Insecticide and Disinfectant Manufacturers for

INSECTICIDES and DISINFECTANTS

OFFICIAL SPECIFICATIONS
Liquid Household Spray Insecticide

(Adopted December, 1936)

1. A household spray oil type insecticide shall be harmless to man and warm blooded household animals, when used as directed.

2. When sprayed, as directed, it shall not stain fabrics, wall paper and general household furnishings, that are not stained by dry cleaning fluid.

3. When used in the customary manner it shall not contaminate closed packages of food materials commonly found in homes.

4. It shall not corrode metals.

5. It shall have no objectionable odor, and no particular odor shall be specified.

6. It shall have a flashpoint not less than 125° F. when tested in the Tagliabue closed cup.

7. It is recommended that it be purchased on a direct competitive basis with the Official Test Insecticide of the National Association of Insecticide and Disinfectant Manufacturers, Inc., by using the method of test specified in literature accompanying the Official Test Insecticide.

8. The Association hereby adopts the following grades (the plus or minus figures shown therein designating the points over or under the Official Test Control Insecticide when the "Unknown" and the "Control" are tested at the same time in the same manner):

Designation	*Grade*	*Kill Classification*
AA	Excellent	+ 16 or higher
A	Very Good	+ 6 to + 15
B	Equal to Official Test Insecticide	+ 5 to — 5

● ●

1: Standard Specifications for Liquid Hypochlorites Disinfectant, Deodorant and Germicide

Composition—Liquid hypochlorites are available in three forms: *one,* sodium hypochlorite alkaline with sodium hydrate, sodium carbonate or the other alkaline salts; *two,* hypochlorites which are essentially sodium hypochlorite and alkaline with calcium hydrate; and *three,* calcium hypochlorite solutions alkaline with calcium hydrate. A delivery of any one of these shall be satisfactory unless otherwise specified.

Physical Requirements — The hypochlorite solution shall be a homogeneous liquid. It shall be miscible with water of zero hardness at 20°C. (68°F.) in all proportions. It shall be ready for dilution when delivered.

Chemical Requirements—The available chlorine content which shall not be less than 2.5 per cent by weight shall be clearly stated on the label. Its rate of deterioration shall not be more than 10 per cent of its original available chlorine content when stored in the orginal container for six months in a cool, dark place at maximum temperature of 68°F. (20°C.).

Identification—Each container shall be marked with the name of the material, the brand (if any) of the material, the name of the manufacturer, net contents therein, and date of manufacture.

Packing—The hypochlorite shall be delivered in standard commercial containers of the size as called for in the schedule. Each container holding one gallon or more shall be stoppered with a closure having vent.

2: Standard Specifications for Pine Oil Disinfectant

1. The product shall be manufactured from pure steam distilled pine oil and emulsifying agent and remain clear and homogeneous under normal and reasonable conditions of storage.

2. It shall contain not less than 60 per cent by weight steam distilled pine oil.

3. It shall contain not more than 10 per cent water.

4. The phenol coefficient shall be determined by the F.D.A. Method of Test against B. typhosus and be clearly stated on the label attached to each shipping container.

5. It shall not contain kerosene or other petroleum distillates.

6. The product shall make a stable emulsion in water of zero hardness at 20°C. (68°F.) when diluted at the rate of 5 per cent. The emulsion shall stand for at least twenty-four hours showing no sign of oil float (unsaponified or clear free oil).

3: Standard Specifications for Emulsifying Type Coal Tar Disinfectant

1. It shall be made from phenols of coal tar or petroleum origin, or combinations of such phenols with coal tar oils, and an emulsifying agent.

2. It shall contain not less than 65 per cent by weight of phenols and coal tar oils.

3. It shall contain not over 10 per cent of water, by weight.

4. It shall not contain kerosene or any petroleum distillates other than phenols of petroleum origin.

5. The phenol coefficient shall be determined by the Food and Drug Administration Method using B. typhosus as test organism, and shall be clearly stated on the label attached to each shipping container.[1]

6. It shall make milky emulsions with water of zero hardness at 20° C (68° F) when diluted in the ratio of 5 parts of disinfectant to 95 parts of water for disinfectants having phenol coefficients of 10 or under; and in the ratio of 2 parts of disinfectant to 98 parts of water for disinfectants having phenol coefficients of over 10. These emulsions shall show not more than a trace of oily float or sediment when stored for 5 hours at room temperature.

7. It shall remain limpid, showing no sign of naphthalene crystallization down to 0° C in 3 hours.

8. It shall contain less than 5 per cent of benzophenol.

9. The disinfectant, under normal and reasonable conditions of storage, shall remain stable and show no loss of germicidal value.

Certification and Labeling

10. The following form of statement on labels[2], invoices, etc., is recommended:

"The .....Company certifies this phenolic disinfectant (emulsifying type) to conform to all requirements of the standard adopted by the NATIONAL ASSOCIATION OF INSECTICIDE AND DISINFECTANT MANUFACTURERS, INC., and recorded as Commercial Standard CS70-.... by the National Bureau of Standards of the U. S. Department of Commerce.
Phenol coefficient....."

[1]This type of disinfectant is available with phenol coefficients ranging from 2 to 30, and higher. Contract buyers should specify the phenol coefficient desired.

[2]When used on labels this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

4: Standard Specifications for Cresylic Disinfectants

Scope

1. This standard covers materials, physical and chemical properties, and certification of quality of phenolic disinfectant (soluble type), classified under two groups as follows:

(a) Group I—Phenolic disinfectants having phenol coefficients from 1.5 to 5[1].

(b) Group II—Phenolic disinfectants having phenol coefficients above 5.

Detail Requirements (Group I)

2. Group I disinfectants shall be made from cresol or cresylic acid of coal tar or petroleum origin, and a dissolving agent.

3. Group I disinfectants shall contain not less than 50 per cent of cresol or cresylic acid, as determined by the method prescribed in U. S. Pharmacopoeia XI for the assay of cresol in the Saponated Solution of Cresol.

4. Group I disinfectants shall contain not more than 25 per cent by weight of inert ingredients (water plus glycerine, and organic solvents, if any).

5. The phenol coefficient of Group I disinfectants shall be determined by the Food and Drug Administration Method using B. typhosus as the test-organism, and shall be clearly stated on the label attached to each shipping container.

6. Group I disinfectants shall contain less than 5 per cent of benzophenol.

7. Group I disinfectants shall make clear solutions with water of zero hardness at 20° C (68° F) within the concentration range of from 1 to 4 per cent; such solutions, when kept in closed containers, shall remain either practically clear or become only slightly opalescent when allowed to stand for 24 hours at 20° C (68° F) away from direct light.

8. Group I disinfectants shall show no soap separation when cooled down to 0° C and held at this temperature for 3 hours.

Detail Requirements (Group II)

9. Group II disinfectants shall be made from phenols of coal tar or petroleum origin, and a dissolving agent.

10. Group II disinfectants shall contain not less than 50 per cent of phenols[2].

11. Group II disinfectants shall contain not more than 25 per cent by weight of inert ingredients (water plus glycerine and organic solvents, if any).

12. The phenol coefficients of Group II disinfectants shall be determined by the Food and Drug Administration Method using B. typhosus as the test-organism, and shall be clearly stated on the label attached to each shipping container.

13. Group II disinfectants shall contain less than 5 per cent of benzophenol.

14. Group II disinfectants shall make clear solutions with water of zero hardness at 20° C (68° F) at concentrations of 2 per cent or less; such solutions, when kept in closed containers, shall remain either practically clear or become only slightly opalescent when allowed to stand for 24 hours at 20° C (68° F) away from direct light.

15. Group II disinfectants shall show no soap separation when cooled down to 0° C and held at this temperature for 3 hours.

Certification and Labeling

16. The following form of statement on labels[3], invoices, etc., is recommended:

"The .....Company certifies this disinfectant to conform to all requirements for (Group I) (Group II) of the standard adopted by the NATIONAL ASSOCIATION OF INSECTICIDE AND DISINFECTANT MANUFACTURERS, INC., and recorded as Commercial Standard CS71-...., by the National Bureau of Standards of the U. S. Department of Commerce.
Phenol Coefficient....."

[1]The disinfectants of Group I fall within the type commonly designated "Cresylic disinfectants."

[2]A satisfactory method of assay of all possible types of disinfectants comprised by Group II is not available, but work on the subject is in progress.

[3]When used on labels, this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

Salt Water Detergent

(*From Page* 164)

Soap.—The soap shall be made chiefly from tallow, but may include 10 per cent of other domestic fats or oils, or rosin. The soap shall contain not more than 0.7 per cent of glycerine, based on the anhydrous soap content.

Synthetic detergent. The synthetic detergent shall contain 50 per cent or more of active organic ingredient which shall foam and cleanse in sea water. The active ingredient shall preferably be a member of the class represented by the general formula,

A——R—SO_3Na,

in which A is an alkyl radical containing 10 or more carbon atoms, and R is an aromatic or aliphatic grouping. The active ingredient shall be completely stable in the presence of moist soap, as compounded in the detergent bar, during one year of storage under normal conditions.

Composition. — The composition of salt-water detergent, bar form, shall be as shown in Table I.

Performance. — Salt-water detergent, bar form, shall remove the soil from a standard soiled sample of woolen cloth, using synthetic sea water, when tested as specified.

Lather. — Salt-water detergent, bar form, shall produce a net volume of foam of not less than 45 ml, when tested as specified.

Dermatitis. — Salt-water detergent, bar form, shall not cause dermatitis when tested as specified.

Floor Finish Specifications

Specifications of Maple Flooring Manufacturers Association for Heavy Duty Finishes For Maple, Beech and Birch Floors

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A. General Requirements

1. The material shall be suitable for application to new Maple, Beech and Birch flooring or to such flooring which has been in service.

2. The presence of waxes will be permitted within the limits of the detailed requirements.

B. Detailed Requirements

1. The material shall not contain more than 1.0 per cent of water unless it is an emulsion of adequate stability in which case the water shall be the dispersed phase.

2. The material shall not contain more than 0.1 per cent of suspended inorganic matter.

3. The flash point of the material shall not be under 100° F.

4. The material shall contain not less than 28 per cent by weight of non-volatile matter.

5. The film formed by the material, when thoroughly dried, shall not be brittle.

6. The film formed by the material, when thoroughly dried, shall be resistant to abrasion.

7. The film formed by the material, when thoroughly dried, shall be resistant to cold water.

8. The material when applied according to the directions of the manufacturer shall not markedly darken the wood.

9. The material when applied according to the directions of the manufacturer and allowed to dry in the air for 24 hours, shall not be slippery, sticky or gummy.

Specifications For Gymnasium-Type Finishes For Maple, Beech and Birch Floors

(Adapted to gymnasium floors — where general public is not admitted—and other floors under light traffic.)

A. General Requirements

Same as Heavy Duty Finishes.

B. Detailed Requirements

These shall be the same as for Heavy Duty Finishes except as noted below.

4. The material shall contain not less than 40 per cent by weight of non volatile matter.

Disinfectant Testing—F. D. A. Method

Official Method of U. S. Food & Drug Administration, U. S. Department of Agriculture, and National Assn. of Insecticide and Disinfectant Manufacturers for Determination of Phenol Coefficients of Disinfectants

By G. L. A. RUEHLE and C. M. BREWER
U. S. Food and Drug Administration

ALL antiseptics and disinfectants shipped or offered for shipment in interstate commerce or offered for import into or export from the United States are subject to the provisions of the Federal insecticide act, the Federal food and drugs act, or both. In the enforcement of these acts it is necessary to determine the accuracy of the bactericidal and antiseptic claims made for such products. A number of methods have been developed for determining bactericidal effectiveness, but all of them possess certain disadvantages. Of course it is impossible to devise tests which will apply in all cases, but during the past 20 years the Insecticide and Fungicide Board and the Food and Drug Administration have found certain methods to be particularly well adapted to their purposes.

Confusion has arisen from the fact that, in many cases, manufacturers have not used the same methods of testing their products, as a basis for preparing their labels, as those used by the administration. This possibility of misunderstanding would be obviated if the same methods were employed by all, and many manufacturers, recognizing this, have requested information as to the methods employed by the Food and Drug Administration. In view of this, it seemed desirable to publish them in a form which would make them generally available.

This circular, therefore, describes briefly the methods usually employed in the insecticide control laboratory for testing official samples of antiseptics and disinfectants. No attempt is made to review the literature of disinfectant testing in detail, but the most important papers relating to the methods here presented are cited.

Determination of Phenol Coefficient[1]

There are in general use at the present time three methods of determining the phenol coefficient; the Hygenic Laboratory (H. L.) method (11)[2], that of Rideal-Walker (R-W) (7), and the method developed by this laboratory. It has been realized for a long time, especially among qualified workers in the field of phenol coefficient testing, that there were numerous handicaps and minor deficiencies to be encountered in the routine manipulation of both the H. L. and R-W methods. Lloyd P. Shippen, formerly bacteriologist of the Insecticide and Fungicide Board, after much experience in the testing of disinfectants, devised a method for obtaining phenol coefficients, utilizing as its basis the best features of the two older tests. Under pressure of a great volume of routine work this method was first put into practice more than 15 years ago and found to be so satisfactory that it has come to be used for testing the great majority of the germicides now received at the Food and Drug Administration.

George F. Reddish, successor to Doctor Shippen, later published this method under the name, "The R-W modified method" (5).

The procedure of Shippen has been little changed, but the standards for the resistance of the test organisms, *Eberthella typhi* (Schröter) Buchanan,[3] and *Staphylococcus aureus* Rosenbach, have been firmly established and provisions for the use of other organisms have been added. The method, as here published, is designated the "Food and Drug Administration phenol coefficient method" or briefly, the "F. D. A. method."

The differences in the three methods are shown in Table 1. (See Next Page).

There need be very little confusion arising from substituting the F. D. A. method as a test for products previously tested by either the R-W or the H. L. methods. The phenol coefficients of the large number of substances chemically related to phenol (the only type of disinfectants for which the H. L. method is accepted) (11) are, in most cases, practically the same, whether tested by the F. D. A. or the H. L. method. Not only has continued use of the method in this laboratory shown this to be true (2), but collaborative experiments in five other laboratories (unpublished) confirm this fact. In comparing this method with the R-W method, similar results in general are obtained, although a somewhat lower coefficient usually results with coal-tar products having high coefficients. However, the higher results sometimes obtained by the R-W method may be misleading. R-W broth is not well adapted for the optimum growth of the test organism; hence negative subcultures frequently indicate that the organism has been killed, when in fact it may have been only rendered incapable of growing in this culture medium.

The curtailment in labor, time, and material through the use of the F. D. A. method renders it particularly valuable where a large number of samples are involved. The F. D. A. method is considerably superior to the R-W method in producing consistent results (4, 12). The medium employed is better adapted to bacterial growth, and the technic is not restricted to the use of one test organism (*Eberthella typhi*) as is the case of the R-W and H. L. methods. Moreover, the stock cultures of *E. typhi* and *Staphylococcus aureus*, the organisms principally used in germicidal testing, remain sufficiently constant in their resistance to phenol, when grown to an adjusted medium, to necessitate but one phenol control,

---

[1] For the benefit of those unfamiliar with testing disinfectants a brief statement of the principles of determining phenol coefficients is made. The phenol coefficient is a figure expressing the ratio of the killing efficiency of a disinfectant as compared with that of phenol tested under identical conditions. The sample to be tested is diluted and the dilutions arranged in a series of decreasing concentrations (increasing dilutions). To these a specified amount of the test organism in broth culture is added. At the end of fixed periods of time a small portion of the mixture of diluted disinfectant and test organism is transferred to a nutrient culture medium and incubated. No growth in the subculture indicates that the organism has been killed. The greatest dilution (weakest concentration) of the disinfectant killing in a definite time period is divided by the greatest dilution of phenol killing in the same time period. This ratio is the phenol coefficient. It should be noted that the phenol coefficient is not based on a comparison of different time intervals but on a comparison of different concentrations acting for specified time periods.

[2] Numbers in parentheses refer to Literature Cited. Page 196.

[3] Throughout this paper the term *Eberthella typhi* is used for *Bacillus typhosus*, in accordance with the nomenclature adopted by the committee on classification of the Society of American Bacteriologists (1).

SKINNER & SHERMAN, INC.

246 STUART STREET *Bacteriologists & Chemists* BOSTON, MASS.

DISINFECTANTS AND ANTISEPTICS TESTED BY STANDARD PROCEDURES
TOXICITY INDEX DETERMINED BY CHICK EMBRYO METHOD OF SALLE

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OFFICIAL CHEMISTS OF RUBBER MANUFACTURERS ASSOCIATION, INC.
FOR TESTING OF RUBBER FLOOR POLISHES AND CLEANERS

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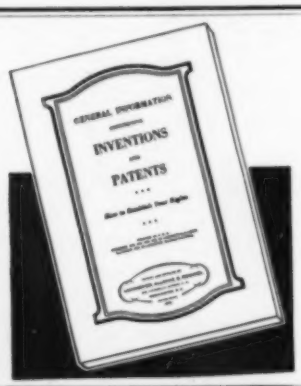

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TABLE 1.—*Differences in media and manipulation of the three methods of determining phenol coefficient.*

Item	F. D. A. method	R-W method	H. L. method
Composition of medium.....	Peptone[1], 10 gm..... Liebig's beef extract, 5 gm.... Salt, 5 gm..... Water, 1,000 c. c..... Boil 20 minutes.....	Peptone[2], 20 gm..... Liebig's beef extract, 10 gm... Salt, 10 gm..... Water, 1,000 c. c..... Boil 30 minutes.....	Peptone[1], 10 gm. Liebig's beef extract, 3 gm. Salt, 5 gm. Water, 1,000 c. c. Boil 15 minutes.
Acidity of medium.....	pH 6.8	+1.5 No definite pH.....	Unadjusted but pH between 6.0 and 7.0.
Amount of culture medium in tube.	10 c. c.....	5 c. c.....	10 c. c.
Amount of culture added to diluted disinfectant.	0.5 c. c. to 5.0 c. c.....	0.5 c. c. to 5.0 c. c.....	0.1 c. c. to 5.0 c. c.
Resistance of test culture to phenol (dilutions killing in 10 minutes but not in 5 minutes).	1-90	1-90 to 1-110.....	No limits stated.
Condition of tube in test.....	Plugged with cotton.....	Plugged with cotton.....	Open tubes.
Temperature of test.....	20° C.	15-18° C.	20° C.
Time intervals of the test....	5, 10, and 15 minutes.....	2½, 5, 7½, and 10 minutes...	5, 7½, 10, 12½, and 15 minutes.
Amount of medication mixture transferred (size of loop).	4 mm. loop (of No. 23 B. and S. gage wire).	4 mm. loop (of No. 27 Imperial gage wire).	Spiral loop (four spirals wrapped around a No. 13 B. and S. gage wire. Made of No. 23 B. and S. gage wire).
Calculation of phenol coefficient.	Highest dilution not killing in 5 minutes but killing in 10 minutes divided by same for phenol.	Highest dilution not killing in 5 minutes but killing in 7½ minutes divided by same for phenol.	Mathematical mean of highest dilutions showing no growth in 5, 10, and 15 minutes divided by same for phenol.

[1] Armour's, Special batch set aside for disinfectant testing.
[2] Allen and Hanbury's.

though two controls are used frequently as an additional check. This allows the use of nine dilutions of the unknown with 30-second intervals between transfers, or 14 when 20-second intervals are used. With a little practice, 20-second intervals allow sufficient time.

The F. D. A. method will be used by this laboratory in determining the dilutions at which miscible coal-tar disinfectants, and many other products to which the method is applicable, should be used for disinfecting purposes. As heretofore, this dilution should be at least equal in strength to a 5 per cent solution of phenol when tested against *Eberthella typhi* (20 times the phenol coefficient figure) and should be based on a phenol coefficient not higher than that obtained by the F. D. A. method.

FOOD AND DRUG ADMINISTRATION METHOD

THE test organism is a 22-26 hour culture of *Eberthella typhi* (Hopkins strain) incubated and grown in nutrient broth at 37° C. The broth contains the following ingredients: 5 gm. of Liebig's beef extract, 5 gm. of chemically pure sodium chloride, and 10 gm. of Armour's peptone (for disinfectant testing) in 1,000 c. c. of distilled water. The mixture is boiled for 20 minutes, made up to original weight (or volume) with distilled water, and adjusted with NaOH to pH 6.8 using the colorimetric method (3, p. 405-421). It is then filtered through paper, tubed (10 c. c. to each tube), and the tubes plugged with cotton and sterilized at 15 pounds pressure for 40 minutes. The test culture is transferred daily in this medium for not more than one month. At the end of each month, a fresh transfer is made from the stock culture. The stock culture is carried on agar slants of the same composition as the broth medium plus 1½ per cent Bacto-Agar (Difco), adjusted to pH 7.2 to 7.4. This medium is also filtered, tubed, plugged with cotton, sterilized, and slanted. The stock culture is transferred once a month, and the test organism is taken from the month-old stock culture. When the test organism has not been transferred daily, it is advisable to make four or five consecutive daily transfers in broth before using it for testing purposes, to be reasonably sure of its conforming to the phenol resistance requirements. When only one transfer has been skipped the following transfer from the 48-hour culture is usually satisfactory for use after 24 hours. Transfers are made with the platinum loop used in the test. Only cultures giving readings within the following limits are considered satisfactory:

Phenol	5 min.	10 min.	15 min.
1-90	+	+	0
1-100	+	+	+
or			
1-90	0	0	0
1-100	+	+	+

The following reading is that most usually obtained and is the most convenient:

Phenol	5 min.	10 min.	15 min.
1-90	+	0	0
1-100	+	+	+

PHENOL

The phenol used must meet the requirements of the United States Pharmacopoeia, and in addition the congealing point must not be below 40° C. A 5 per cent solution may be used as a stock solution if kept in a relatively cool place in well-stoppered amber-colored bottles protected from the light. This 5 per cent solution should be standardized with decinormal bromine (described under 'phenol" (10, *p.* 823), or with sodium bromide and bromate solution (9, *pp.* 404-405).

APPARATUS

Besides a number of accurately graduated pipettes, 100-c. c. glass-stoppered graduates or volumetric flasks are almost essential for the making of correct dilutions. All pipettes and graduates should be standardized. The test tubes for containing the dilutions should be large enough to permit transfers being made without touching the sides with the transfer needle. Lipped pyrex (to withstand constant flaming) test tubes 25 by 150 mm. serve very well as these seeding or medication tubes. A water bath for holding the dilutions at the desired temperature must be provided. To maintain the temperature practically constant dur-

ing the period of the test, the bath should be made so as to contain a relatively large volume per surface area, and should be insulated. The lid is made with well-spaced holes admitting the 25-mm. tube, but not the lip. The most convenient form of subculture tubes (tubes containing medium for incubating the tested organisms, as well as for growing the test culture) are ordinary non-lipped bacteriological test tubes 20 by 150 mm. The racks for holding the subculture tubes may be any convenient style. Blocks of wood with a series of holes bored in them are quite satisfactory. Dimensions depend somewhat on the size of the incubator, but the holes should be well spaced to insure quick selection and easy manipulation during the test. It is an added convenience to have the holes large enough to admit the medication tubes while dilutions are being made. The transfers are made with a 4-mm. (inside diameter) single loop of number 23 B. & S. gage platinum wire, 1½ to 3 inches long, set in a suitable holder such as an aluminum or glass rod approximately 0.5 cm. in diameter.

PROCEDURE

One per cent stock dilutions of the substance to be tested (or any other convenient dilution of the disinfectant, depending on the strength are made up, usually in the glass-stoppered cylinders or volumetric flasks from which the individual dilutions are then prepared. For rapid routine work, the final dilutions may be made directly in the medication tubes. In this case all excess over 5 c. c. must be removed. For more precise work and when high dilutions are required or volatile substances are dealt with, it is preferable to make up all of the dilutions in volumetric flasks and then transfer 5 c. c. of the final dilution to the medication tubes. These tubes containing 5 c. c. of each dilution (including the phenol control) are placed in the water bath at 20° C., for five minutes until the temperature of the bath is reached. Even slight variations in temperature may affect the results. The dilutions should cover the range of the killing limits of the disinfectant within 5-and 15-minute periods and should at the same time be spaced sufficiently close together to insure the desired accuracy. Five-tenths of a cubic centimeter of the test culture is then added to each of the dilutions at a time interval corresponding to the interval at which the transfers are to be made. Thus by the time 10 tubes have been seeded at 30-second intervals, four and one-half minutes will have elapsed and a 30-second interval intervenes before the transference to the subcultures is commenced. The culture is added from a graduated pipette holding sufficient culture to seed all the tubes in any one set. The pipette may be loosely plugged with cotton at the mouth end before sterilizing, as a precautionary measure. Unfiltered culture is used, but it should be thoroughly shaken 15 minutes before use and allowed to settle. The temperature of the culture should be practically that of the water bath before being added.

In inoculating the medication tubes they should be held in a slanting position, after removal from the bath, and the culture run in without the tip of the pipette touching the disinfectant. The tip may be allowed to rest against the side of the tube just above the surface of the liquid. The tubes are agitated gently but thoroughly after the addition of the culture to insure even distribution of the bacteria. Five minutes from the time of seeding the first medication tube, transfer 1 loopful of the mixture of culture and diluted disinfectant from the medication tube to the corresponding subculture tube. To facilitate transfer of uniform drops of the medication mixture, the loop is bent to form a slight angle with the stem and the medication tube is held at an angle of 60°. In other words, as the loop is withdrawn, its plane should be parallel with the surface of the liquid. At the end of 30 seconds, a loopful is transferred from subculture tube and the process continued for each successive dilution. Five minutes from the time of making the first transfer, a second set of transfers is begun for the 10-minute period and finally repeated for the 15-minute period. Before each transfer the loop is heated to red heat in the Bunsen flame and the mouth of every tube is flamed. Sterilization of the loop is effected immediately after making the previous transfer (before replugging the tubes) to allow time for sufficient cooling. Time does not permit flaming the tubes after making the transfer. For this reason, care in transferring and seeding is necessary. Due caution is observed to prevent either the seeding pipette or the transfer needle from touching the sides or mouth of the medication tube; neither should cotton threads be found adhering to the sides or mouth of these. After completion of the transferring, the subculture tubes are incubated at 37° C. for 48 hours and results read. Microscopic examinations usually suffices for this, but occasionally agglutination with antityphoid serum will aid in reading doubtful results. A 3-day incubation period or agar streak or microscopic examination may be resorted to in determining feeble growth. especially when organisms other than *Eberthella typhi* are used.

There are certain types of germicidal agents, such as many of the mercury compounds, which give very high results by phenol coefficient tests (8). Due to the high inhibitory value of such substances in preventing growth in the subcultures these figures are frequently misleading. For germicides used in the disinfection of such objects as surgical instruments, this is of particular importance and must be taken into account. Failure to appreciate this characteristic of certain compounds is much more likely to lead to error when *Staphylococcus aureus* is used rather than *Eberthella typhi* as the test organism. That false values may not be obtained for products of this type, or for any other disinfectant giving suspiciously high results, the subcultures should contain very large amounts of medium (not less than 200 c. c.) or they should be retransferred by carrying at least 4 loopfuls from the first subculture to a second tube of broth, as recommended by Shippen (8).

Other groups of disinfectants in common use, for which the phenol coefficient method of testing is not well adapted, are those compounds containing chlorine as the active agent as well as oxidizing agents in general. These are affected so materially by the pressure of organic matter that a phenol coefficient statement may grossly misrepresent their value under practical conditions of use and is very apt to be misleading to the consumer when placed on the label.

CALCULATION OF PHENOL COEFFICIENT

THE results of the test are expressed in terms of the phenol coefficient. This represents the germicidal value of the diluted disinfectant as compared with the diluted phenol control. It is a figure obtained by dividing the numerical value of the greatest dilution (the denominator of the fraction expressing the dilution) of the disinfectant capable of killing *Eberthella typhi* in 10 minutes but not in 5 minutes, by the greatest dilution of phenol showing the same results; that is, by the phenol control. Thus, if the results were as follows:

Disinfectant (X):

	5 min.	10 min.	15 min.
1-300	0	0	0
1-325	+	0	0
1-350	+	0	0
1-375	+	+	0
1-400	+	+	+
Phenol:			
1-90	+	0	0
1-100	+	+	+

The phenol coefficient would be $\frac{350}{90} = 3.89$

If none of the dilutions show growth in 5 minutes and killing in 10 minutes, the hypothetical dilution may be estimated in certain cases. This may be done only when any three consecutive dilutions show the following results:

The first, no growth in 5 minutes; the second, growth in 10 minutes but not in 15 minutes; and the third, growth in 15 minutes; for example:

If the results were as follows:

Disinfectant (X):

	5 min.	10 min.	15 min.
1-300	0	0	0
1-350	+	+	0
1-400	+	+	+
Phenol:			
1-90	0	0	0
1-100	+	+	0

the estimated phenol coefficient would be

$$\frac{325}{95} = 3.42$$

To avoid giving an impression of fictitious accuracy, the phenol coefficient is calculated to the nearest 0.1 unless the coefficient is less than 1.0. Thus, in the examples cited above, the phenol coefficients would be reported as 3.9 and 3.4 instead of 3.89 and 3.42.

In the preceding description, *Eberthella typhi* has been mentioned as the test organism. Wherever any expression of phenol coefficient occurs in literature, on labels, etc., it is assumed to mean the *E. typhi* phenol coefficient, unless otherwise stated. It is, however, the distinct intention of this department not to limit the test to the use of one organism. In fact, the test has been found adaptable to the use of a wide variety of bacterial species in the determination of phenol coefficients. In cases where some of the more strictly parasitic bacteria are used, modifications in media are necessitated, and, of course, a change in the phenol dilutions. The writers are not in a position at this time to prescribe the limits of resistance for many of the organisms that might be used. Therefore discussion of the exact technic is here omitted, with the exception of that for *Staphylococcus aureus*. Suggestions for the use of certain representative types may, however, be found in a paper by Reddish (5). When any test organism other than *E. typhi* is used it should be distinctly designated when stating the phenol coefficient.

S. aureus has been found to be an extremely useful organism for testing disinfectants and antiseptics and has been used for this purpose for a number of years. When substituted in the above test the technic remains exactly the same. The phenol dilutions, however, must be changed. The resistance of any strain of *S. aureus* used in this test must come within the following limits: At 20° C. it must survive a 1-60 dilution of phenol for 5 minutes and a 1-70 dilution for 15 minutes. The following is the minimal resistance that would be acceptable:

Phenol:	5 min.	10 min.	15 min.
1-60	+	0	0
1-70	+	+	+

In the bacteriological examination of disinfectants, the *Eberthella typhi* and the *S. aureus* phenol coefficients give, in general, sufficient information to render tests with other organisms unnecessary, except in special instances. The commonly accepted criterion that disinfectants for general use be employed at a dilution equivalent to the germicidal efficiency of 5 per cent phenol against *E. typhi* (that is, 20 times the *E. typhi* phenol coefficient) allows a reasonable margin of safety for the destruction of infective agents likely to be the object of general disinfection about premises with the possible exception of *Mycobacterium tuberculosis*. *S. aureus*, due to it subiquity resistance and ever-ready tendency to cause infection, should always be employed in testing those substances recommended for personal use or as applications for wounds. If the disinfectant is recommended for use externally the temperature of the test should be 20° C., but where such substances are recommended for use in the body cavities, such as for mouth washes, gargles, douches, etc., this test should be conducted at 37° C. In such case the test should be designated "The F. D. A. method (special) *S. aureus*, 37° C." At body temperature the *S. aureus* should show the following resistance to phenol:

	5 min.	10 min.	15 min.
1-80	+	0	0
1-90	+	+	+

Or

	5 min.	10 min.	15 min.
1-80	+	0	0
1-90	+	+	0

The previous description of this method (5) differed from this only in allowing a slightly wider latitude in the resistance of the test organism against phenol.

OTHER TESTS FOR GERMICIDES[4]

THE limitations of the phenol coefficient make it necessary in some cases to judge the germicidal preparation by other tests or by additional tests. This is particularly true of preparations that are not completely soluble or miscible in water. It is also true of certain preparations designated as antiseptics.

Soluble antiseptics or antiseptics completely miscible with water can be tested, of course, by the procedure already described as the F. D. A. *Staphylococcus aureus* phenol coefficient method. In the testing of these substances, however, the phenol coefficient is not obtained necessarily, the phenol figure being used merely as a check of the resistance of the test organism. The information desired is the concentration which will kill in five minutes.

In an effort to stimulate practical conditions, it is frequently advisable to conduct the tests in the presence of blood serum. Sterile horse serum in a concentration of 10 per cent is ordinarily used, both in the germicidal and inhibitory tests. Special claims and uses of a product, however, frequently indicate the desirability of a higher concentration of this organic enrichment.

The following methods designed for the testing of insoluble and immiscible products are in use in this laboratory at the present time. Some of them have been used for years and have been described previously (6). Laboratory tests, of course, cannot duplicate the exact conditions found in practice. The procedures here outlined, however, are as close an approach to practical conditions as is feasible in routine laboratory tests, and reveal the obviously useless preparations. It should be noted that inhibitory tests are considered along with other facts in interpreting whether or not the substance will be of value in practical use. It must be remembered that not only bacteriological but physiological and pharmacological facts frequently must be taken into consideration in judging many substances.

THE WET FILTER-PAPER METHOD

The wet filter-paper method is a germicidal test rather than a test of inhibitory properties. It is used when the substance to be tested is not soluble or completely miscible with water, or for substances that are to be used in high concentration, such as soaps, tooth pastes, suppositories, dyes, dusting powders, salves, and ointments. If the substance is to be used in the body cavaties the test is carried out at 37° C.; if not, the test is carried out at 20°, or at room temperatures, and the temperature is recorded.

No. 2 Whatman filter paper is cut into pieces about 0.5 cm. square, and sterilized in a plugged test tube at temperatures below 170° C. to prevent charring. A suitable number of the paper squares are then impregnated with *Staphylococcus aureus*, or other test organisms, by immersion in a 24-hour broth culture of the organism. The culture must have the standard resistance required for phenol coefficient testing. The wet inoculated squares are then placed in the liquid or solid substance to be tested in such a way as to be completely covered and in intimate contact. At the end of 5 minutes, 10 minutes, 15 minutes, or 1 hour, or any other desired length of time, the wet papers are removed with a sterilized, stiff, platinum wire bent at a sharp angle to form a hook and placed in 10 c. c. of sterile broth. After as much of the disinfectant as possible has been removed (in the case of sticky substances, the needle must be used to aid in freeing the squares of adherent germicide) the squares are retransferred to a fresh tube of sterile broth (10 c. c.) and the tubes incubated at 37° for 48 hours, when they are observed for evidence of growth.

It will be noted that in this test resubcultures are always required, since the first tube of broth to which the filter-paper squares have been added frequently contains sufficient antiseptic to exhibit inhibition of growth. Both tubes of broth are usually incubated.

THE DRY FILTER-PAPER METHOD

The dry filter-paper method is used in tests of fumigants and of oils that are to

[4] According to current usage the word "antiseptic" has two meanings; to kill bacteria or to prevent their growth, depending upon the use of the product. Products such as salves, ointments, and dressings that remain in contact with the body for long periods of time, may be designated properly as antiseptics if they inhibit the growth of bacteria. On the other hand, mouth washes, douches, gargles, and preparations of like nature are in contact with the body for but brief periods of time and exert negligible inhibitory action. These may be described properly as antiseptics only if they will destroy bacteria under the conditions of use; that is, in the dilutions recommended and in a period of time comparable to that in which they would have an opportunity to act when used as directed.

be used where moisture is absent. It is similar to the wet filter-paper test, squares of paper being used that have been impregnated as described under the test above, except the squares are dried for two days in a sterile Petri dish in the 37° C. incubator. This test can be used successfully only with organisms capable of resisting the drying. *Eberthella typhi* will not withstand the drying. In the writers' work *Staphylococcus aureus* is the usual test organism. The inoculated dried paper squares may be used at any time after drying up to 30 days, but the resistance of the organism at no time should fall so low that it is incapable of withstanding a 1-80 dilution of phenol for five minutes at 20°. It should be noted that control tests with non-medicated squares should always be carried out to test the viability of the test organism. As in the wet filter-paper method, resubcultures are always necessary.

THE AGAR-PLATE METHOD

The agar-plate method is a test for inhibitory properties and is used for substances remaining in contact, with the body in the absence of serous body fluids. Examples of substances which may be tested by this method are salves, dusting powders, creams, plasters, pads, adhesive tape, catgut, and suppositories. The test organism ordinarily used is *Staphylococcus aureus*, but for special purposes the test may be used with any organism capable of growing on agar. The agar is of the same composition as that previously described for carrying stock cultures of the test organism.

Fifteen to twenty cubic centimeters of agar is melted and cooled to 42°-45° C. To this is added 0.1 c. c. of a 24-hour broth culture of the test organism. The inoculated agar is then poured into a sterile Petri plate and allowed to harden. As soon as the agar has hardened, the test substance is placed in intimate contact with the surface of the agar. If a salve, it is first warmed just sufficiently to soften it and thus secure a complete peripheral contact. As a control, warmed sterile petrolatum may be placed on another portion of the plate. The plates are incubated 24-48 hours under unglazed porcelain tops at 37° C. and then are examined for evidence of inhibition. If the preparation is antiseptic or inhibitory, a zone of clear agar will be noted around the place where the substance has been in contact and the width of the zone will indicate the diffusibility of the inhibitory (antiseptic) agent. If there is no inhibition, growth of the test organism will be

[6] The authors are indebted to L. C. Himebaugh for this method.

[6] In the cases where chlorine compounds are used for this purpose the effectiveness is usually judged on the basis of "available" chlorine content.

[7] Intestinal antiseptics do not readily lend themselves to laboratory tests. When medical opinion concerning the physiological and therapeutic properties of such preparations is to be confirmed by the results of bacteriological tests, the products may be considered to be germicidal only when tested in the presence of liberal amounts of organic matter, such as saliva, feces, etc.

METHOD APPLICABLE IN A GIVEN CASE

Substance	*Method Applicable*
Soluble disinfectants:	
A. Preparations for general use.	Phenol coefficient—*E. typhi* at 20° C.
B. Preparations for antiseptic use.	Phenol coefficient technic—*S. aureus* 20° C. or 37° C. as outlined.
C. Preparations for surgical use.	Phenol coefficient technic—*S. aureus* 20° C.
Insoluble and concentrated disinfectants:	
A. Preparations for general use (oils, tarry substances, powders, lime, etc.)	Wet filter paper—*E. typhi* and *S. aureus*. Room temperature.
B. Preparations for use on dry surfaces (spraying oils, sweeping compounds, powders, lime).	Dried filter paper—*S. aureus*. Room temperature.
C. Preparations for fumigation (filter paper and exposed to gas in confined space).	Wet filter paper—*E. typhi* and *S. aureus;* room temperature. Dried filter paper—*S. aureus;* room temperature. (Extension of time may be indicated).
Soluble and liquid antiseptics:	
A. Preparations to be applied for a short time (washes, mouth washes, gargles, douches, etc.).	Phenol coefficient technic—*S. aureus* 20° C. or 37° C. as indicated.
B. Preparations for use on open wounds, etc. (washes).	Phenol coefficient technic—*S. aureus* 20° C. or 37° C. as indicated (Tested in presence of 10 per cent serum.)
C. Preparations remaining on site of application (dyes, wet dressings, rubbing preparations, etc.).	Agar cup-plate.
D. Preparations for use on open wounds, etc. (dyes, wet dressings, etc.).	Serum agar cup-plate.
E. Preparations remaining on site of application but claiming germicidal properties.	Wet filter paper—*S. aureus* 37° C. Extension of time may be indicated.
Solid soluble antiseptics:	
A. Lozenges, tablets, etc.	Wet filter paper—*S. aureus* 20° C. or 37° C. as indicated. Note: Saturated aqueous solution or in dilution indicated.
Insoluble and concentrated antiseptics:	
A. Preparations remaining on site of application (dusting powders, ointments, salves, suppositories, plasters, dressings, etc.).	Agar plate.
B. Preparations remaining on site of application but claiming germicidal properties.	Wet filter paper—*S. aureus* 37° C. Extension of time may be indicated.
C. Preparations for use on open wounds, etc.	Serum agar plate.
Antiseptic materials, appliances, etc.:	
A. Bandages, dressings, catgut, etc.	Serum agar plate.
B. Tape, pads, etc.	Agar plate.
Solid and semisolid antiseptics:	
A. Preparations used for a short time (soaps, soap powders, tooth pastes, tooth powders, etc.).	Wet filter paper—*S. aureus* 20° C. or 37° C. as indicated. (Note: Undiluted and diluted with equal parts water or diluted with sufficient water to form a thick paste or heavy emulsion.)
Disinfectants and antiseptics for use in the absence of organic matter:	
A. Preparations for drinking water.[6]	Phenol coefficient technic—*E. typhi* 20° C. (Note: 0.1 c. c. of culture to 10 c. c. of diluted preparation.)
Intestinal antiseptics.[7]	

(5 c. c. of disinfectant + 95 c. c. of distilled water = solution A)

Dilution	*Solution A* C. c.		*Distilled water* C. c.		*Solution A* C. c.		*Distilled water* C. c.		*Solution A* C. c.		*Distilled water* C. c.
1:20	= 20	+	0	or	10	+	0	or	4	+	0
1:25	= 20	+	5	or	10	+	2½	or	4	+	1
1:30	= 20	+	10	or	10	+	5	or	4	+	2
1:35	= 20	+	15	or	10	+	7½	or	4	+	3
1:40	= 20	+	20	or	10	+	10	or	4	+	4

1:45	=	20	+	25	or	10	+	12½	or	4	+ 5
1:50	=	20	+	30	or	10	+	15	or	4	+ 6
1:55	=	20	+	35	or	10	+	17½	or	4	+ 7
1:60	=	20	+	40	or	10	+	20	or	4	+ 8
1:65	=	20	+	45	or	10	+	22½	or	4	+ 9
1:70	=	20	+	50	or	10	+	25	or	4	+ 10
1:80	=	20	+	60	or	10	+	30	or	4	+ 12
1:90	=	20	+	70	or	10	+	35	or	4	+ 14
1:100	=	20	+	80	or	10	+	40	or	4	+ 16
1:110	=	20	+	90	or	10	+	45	or	4	+ 18
1:120	=	20	+	100	or	10	+	50	or	4	+ 20
1:130	=	20	+	110	or	10	+	55	or	4	+ 22
1:140	=	20	+	120	or	10	+	60	or	4	+ 24
1:150	=	20	+	130	or	10	+	65	or	4	+ 26
1:160	=	20	+	140	or	10	+	70	or	4	+ 28
1:170	=	20	+	150	or	10	+	75	or	4	+ 30
1:180	=	20	+	160	or	10	+	80	or	4	+ 32
1:200	=	20	+	180	or	10	+	90	or	4	+ 36
1:200	=	20	+	180	or	4	+	36	or	2	+ 18
1:225	=	20	+	205	or	4	+	41	or	2	+ 20½
1:250	=	20	+	230	or	4	+	46	or	2	+ 23
1:275	=	20	+	255	or	4	+	51	or	2	+ 25½
1:300	=	20	+	280	or	4	+	56	or	2	+ 28
1:325	=	20	+	305	or	4	+	61	or	2	+ 30½
1:350	=	20	+	330	or	4	+	66	or	2	+ 33
1:375	=	20	+	355	or	4	+	71	or	2	+ 35½
1:400	=	20	+	380	or	4	+	76	or	2	+ 38
1:450	=	20	+	430	or	4	+	86	or	2	+ 43
1:500	=	20	+	480	or	4	+	96	or	2	+ 48

(1 c. c. of disinfectant + 99 c. c. of distilled water = solution B)

Dilution	*Solution B* C. c.		*Distilled water* C. c.		*Solution B* C. c.		*Distilled water* C. c.		*Solution B* C. c.		*Distilled water* C. c.
1:100	= 100	+	0	or	10	+	0	or			
1:100	= 100	+	10	or	10	+	1	or			
1:120	= 100	+	20	or	10	+	2	or			
1:130	= 100	+	30	or	10	+	3	or			
1:140	= 100	+	40	or	10	+	4	or			
1:150	= 100	+	50	or	10	+	5	or			
1:160	= 100	+	60	or	10	+	6	or			
1:180	= 100	+	80	or	10	+	8	or			
1:200	= 100	+	100	or	10	+	10	or	4	+	4
1:225	= 100	+	125	or	10	+	12½	or	4	+	5
1:250	= 100	+	150	or	10	+	15	or	4	+	6
1:275	= 100	+	175	or	10	+	17½	or	4	+	7
1:300	= 100	+	200	or	10	+	20	or	4	+	8
1:325	= 100	+	225	or	10	+	22½	or	4	+	9
1:350	= 100	+	250	or	10	+	25	or	4	+	10
1:375	= 100	+	275	or	10	+	27½	or	4	+	11
1:400	= 100	+	300	or	10	+	30	or	4	+	12
1:400	= 10	+	30	or	4	+	12	or	2	+	6
1:450	= 10	+	35	or	4	+	14	or	2	+	7
1:500	= 10	+	40	or	4	+	16	or	2	+	8
1:550	= 10	+	45	or	4	+	18	or	2	+	9
1:600	= 10	+	50	or	4	+	20	or	2	+	10
1:650	= 10	+	55	or	4	+	22	or	2	+	11
1:700	= 10	+	60	or	4	+	24	or	2	+	12
1:750	= 10	+	65	or	4	+	26	or	2	+	13
1:800	= 10	+	70	or	4	+	28	or	2	+	14
1:850	= 10	+	75	or	4	+	30	or	2	+	15
1:900	= 10	+	80	or	4	+	32	or	2	+	16
1:900	= 5	+	40	or	4	+	32	or	2	+	16
1:1,000	= 5	+	45	or	4	+	36	or	2	+	18
1:1,100	= 5	+	50	or	4	+	40	or	2	+	20
1:1,200	= 5	+	55	or	4	+	44	or	2	+	22
1:1,300	= 5	+	60	or	4	+	48	or	2	+	24
1:1,400	= 5	+	65	or	4	+	52	or	2	+	26
1:1,500	= 5	+	70	or	4	+	56	or	2	+	28
1:1,600	= 5	+	75	or	4	+	60	or	2	+	30
1:1,700	= 5	+	80	or	4	+	64	or	2	+	32
1:1,800	= 5	+	85	or	4	+	68	or	2	+	34
1:2,000	= 5	+	95	or	4	+	76	or	2	+	38
1:2,200	= 5	+	105	or	4	+	84	or	2	+	42
1:2,400	= 5	+	115	or	4	+	92	or	2	+	46
1:2,600	= 5	+	125	or	4	+	100	or	2	+	50
1:2,800	= 5	+	135	or	4	+	108	or	2	+	54
1:3,000	= 5	+	145	or	4	+	116	or	2	+	58
1:3,200	= 5	+	155	or	4	+	124	or	2	+	62

observed adjacent to and even under the test substance.

THE SERUM AGAR-PLATE METHOD

Preparations recommended for use on open wounds, cuts, etc., will be effective only if they exhibit activity in the presence of serous fluids. In testing such preparations the agar-plate method is modified by the addition of 10 per cent sterile horse serum to the agar.

THE AGAR CUP-PLATE METHOD[2]

The agar cup-plate method is merely a variation of the agar-plate method. It is to be used on products liquid at the temperature of the test. The agar or serum agar is inoculated as in the agar-plate method. Before the agar cools, a depression or cup is made in the medium by standing a sterile flat-bottomed glass tube, 1.5 cm. in diameter, in the liquefied agar. On hardening, the glass tube is removed by slightly twisting and pulling at the same time. Insertion of a sterile wire down the side of the tube for the introduction of air will eliminate much of the cracking of the agar. Another method of preparing the agar cup-plate is to allow the medium to harden and then cut out a disk in the agar, by means of a cork borer, 1.5 cm. in diameter. One or two drops of melted agar are placed in the cup to seal cracks or crevices. After the agar cup-plate is prepared, 6 drops of the liquid to be tested are placed in the cup and the plate incubated under an unglazed porcelain top for 24 to 48 hours. If there is a clear zone about the cup, the substance under test has inhibitory properties. Here, as well as in the agar-plate test, the agar in the clear zone may be tested for growth by subculture in broth to indicate whether the action is germicidal or merely inhibitory.

TESTS IN THE PRESENCE OF ORGANIC MATTER

In general, the tests outlined above will take care of the bulk of the preparations coming to this laboratory. However, special tests may be required to determine the value of products recommended for certain purposes. For instance, recommendations on the label may make advisable the use of various additions of organic matter, such as increased amounts of peptone or the addition of gelatin, blood ascitic fluid, saliva, urine, or feces, depending upon the information desired.

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(*Turn to Page* 196)

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Insecticide Testing

PEET-GRADY METHOD

*Official Method of The National Assn. Insecticide & Disinfectant Mfrs. for Evaluating Liquid Household Insecticides**

TWO official biological methods are available for the determination of the effectiveness of household insecticides. The Peet-Grady Method was adopted as an official test in 1932 and has since been improved in minor details, all improvements having been officially accepted after satisfactory trials. The Large Group Modification of the Peet-Grady Method was officially adopted in December, 1938. Although employing the Peet-Grady chamber as the basis of the test, the procedure is sufficiently unlike the original Peet-Grady Method to warrant the name, Large Group Peet-Grady Method to distinguish it from the regular or Small Group Peet-Grady Method requiring small groups of flies as test units.

Both methods are being used extensively; and if correctly performed, evaluations by either test may be expected to be in reasonable agreement. The two methods are designed to evaluate liquid sprays in conjunction with the Official Test Insecticide as the basis of comparison.

THE LARGE GROUP PEET-GRADY METHOD

I. SCOPE

This method of test is a means of determining the relative efficiency of contact liquid insecticides used in the form of a spray. As a biological test, it is subject to variations which accompany the reaction of living organisms and should be employed under the supervision of a person familiar with the biological testing of insecticides. In order to measure with reasonable tolerances the relative position of different insecticides, the test is designed to be used in conjunction with the "Official Test Insecticide" as the basis of comparison. The outstanding feature of the method is the use of representative 500-fly test units having uniform sex ratios, prepared while the flies are in the pupal stage.

II. APPARATUS

A. Rearing Room

This room may be of any convenient size constructed so as to be free from strong drafts, separate from the testing room, and maintained at a temperature between 80 and 85 degrees Fahrenheit with a range in relative humidity between 40 and 70 per cent. It should be separate from the testing room in order to minimize the possibility of traces of insecticide coming in contact with the test insects prior to the test.

B. Testing Room

This room may be of any convenient size capable of holding the standard Peet-Grady Test Chamber and permitting adequate additional space for the operator to handle the test efficiently. While conducting tests this room shall be maintained at a temperature and humidity similar to that employed in the Peet-Grady chamber. Since the exhaust fan of the Chamber will remove relatively large quantities of air, the air inlet to this room should be constructed to permit air of approximately the specified temperature and humidity to enter the room.

C. Peet-Grady Test Chamber

The Test Chamber shall be constructed of wood or metal and lined so the inner surface is smooth and relatively non-porous. The Chamber must be externally braced and the inside must be free of cracks. projections, ledges, etc. The Chamber shall be a 6-ft. cube by internal measurements, with a tolerance of plus or minus 1 in. for any dimension. One wall shall contain a tight fitting door large enough for a man to enter conveniently, with the interior side flush with the wall when closed. One or more of the walls, or the ceiling, may contain an observation window. In the center of the ceiling a glass window, 18 in. square, with a 200 watt light bulb set 6 in. above it in a reflector, is provided for illumination. Opposite the entrance and above the observation windows a wire covered (10 mesh screening) air duct exit shall be provided to permit the ventilation of the chamber after a test. The four lower corners of the Chamber shall contain a 6 x 6 in. square port covered with wire gauze and provided with tight fitting hatches. Each wall shall have two 1 in. holes 6 in. from the ceiling and 1 ft. from the nearest corner, fitted with corks, to permit the introduction of the insecticide. The interior of the chamber is to be painted with a white enamel insoluble in petroleum distillate.

D. Fly Cages

One type of cage is used. It has a floor area approximately 1 ft. square and may be from 8 to 12 in. in height. The floor of the cage is preferably detachable to facilitate cleaning the cages and inserting a paper floor covering. The cages are constructed of wood and 16 mesh wire screening and are fitted with a sleeve opening.

E. Atomizer

The atomizer used shall be the special one constructed by the DeVilbiss Company for the N.A.I.D.M.

* These methods are not designed for the evaluation of semi-concentrate type sprays, except on a dilution basis.

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Standardization Committee and obtainable from that company by referring to "special atomizer for Peet-Grady Insecticide Test — DeVilbiss Special No. 5004." The sprayer shall be operated with air maintained at a constant pressure of 12.5 plus or minus 0.5 lb. per sq. in. which must be free of oil, dust particles, or condensed moisture.

F. Apparatus for Picking Up Flies

Any convenient means of picking up the paralyzed flies without handling or appreciably disturbing them may be used. A vacuum device providing gentle suction and a sufficiently large receptacle to prevent crowding of the flies is recommended.

G. Exhaust Fan

An exhaust fan capable of moving not less than 1000 cu. ft. of air per min. is used to ventilate the chamber after each test. It shall be arranged with adequate piping to exhaust the chamber vapors outside of the building.

H. Test Insect

For evaluation purposes, the house fly (Musca domestica, L.) is used. Healthy test groups having an average age of not less than 4 nor more than 6 days are to be used. Individual flies in the test groups shall not be less than 3 nor more than 7 days old at the time of testing. The strain shall be of such susceptibility that the O.T.I. will cause a mortality of from 30 to 55 per cent.

I. Reference Insecticide

The primary reference insecticide used in this test for evaluating the unknown shall be called the current Official Test Insecticide (O.T.I.) and shall be prepared by the National Association of Insecticide and Disinfectant Manufacturers, Inc., each year. Secondary reference insecticides of greater strength, standardized for toxicity against the O.T.I. may be employed in conjunction with the O.T.I. when rating samples of high toxicity.

J. Insecticide Paper

The paper used on the chamber floor shall be specified as 60 or 70 lb. weight basis, gray bogus wrapping paper, in 36 or 40 in. widths. A new paper surface shall be exposed for each test.

III. PROCEDURE

A. Raising and Handling of Flies

Three culture jars are prepared by filling cylindrical battery jars measuring approximately 6 in. in diameter by 9 in. high, three quarters full of the synthetic medium prepared as follows:

For 3 jars:

1200 g. soft wheat bran (coarse)
600 g. alfalfa meal

Mix together thoroughly, place in jars, and then add to each jar 900 cc. of a suspension consisting of:

2700 ml. water (lukewarm)
50 ml. malt extract
30 g. compressed yeast

Mix the suspension throughout the bran-alfalfa to give a loose mixture. The proportion of liquid ingredients to dry ingredients may be varied slightly to prevent mold growth.

Eggs are deposited in the food dishes of cages containing 4 and 5 day old flies. About 2000 eggs or sufficient to give 1500 to 1800 flies per jar are transferred from the moist cotton to the jars after the medium has been mixed. The number of eggs to use may be determined by gently shaking the eggs in water for a minute, allowing them to settle out and then estimating volumetrically from a calibrated tube. One-tenth ml. of settled eggs contains about 500 eggs.

On the eighth day after preparation, most larvae should have migrated to the top inch of medium and transformed into pupae. On the ninth or tenth day the pupae are separated from the medium by lifting off the top ½ in. of the medium in each jar, loosening the exposed pupae, and then pouring the pupae with adhering particles of medium on a cafeteria tray. The pupae-medium mixture from each of the three jars is combined and then placed in a fan blast until it is of such dryness that the fan blast will effect a clean separation of the pupae and medium when the mixture is sprinkled over an inclined tray placed in the air stream.

The separated pupae are weighed into groups of approximately 500, and each group is placed in a shallow dish which is in turn placed in a cage. In this manner a series of eight or ten approximately uniform test units may be obtained from each culture. The series of test units is then kept for 5 days after peak emergence or until the second day of oviposition (usually the 15th day after the culture was prepared), each cage being supplied each morning with a 4-oz. dish containing 3 oz. of a 50 per cent dilution of milk with water, together with sufficient absorbent cotton to prevent flies from drowning. Water or other foods should not be used as certain foods have been found to affect both oviposition and susceptibility to the spray. On the day of testing the flies should be fed at least 3 hr. before spraying begins.

B. Test Procedure

On the second day of oviposition the series of cages from one culture are ready for testing. All flies in one cage are transferred to the thoroughly cleaned Peet-Grady chamber, the floor of which is covered with the specified gray bogus wrapping paper. All ports and entrances are closed, the windows are equally shaded, and a total of 12 ml. of insecticide is applied at 12.5 lb. pressure in approximately equal quantities through each spray hole, the atomizer being swung horizontally to distribute the spray to all parts of the chamber. The chamber is kept closed at an inside temperature of 85°±2° for 10 min. from the time the spraying is started. At the end of 10 min. the ports are opened and the chamber is ventilated while the flies are being picked up.

The paralyzed flies are picked up and transferred immediately to the same cage from which they were taken, the cage having been wiped out with a damp cloth and supplied with a new paper floor covering during the 10-min. exposure period.

During the subsequent 24-hr. recovery period, the cage is placed in the rearing room and supplied with a gauze wrapped ball of cotton saturated with 10 per cent sugar solution.

The few unparalyzed flies in the chamber at the end of the 10-min. exposure period are counted and removed.

Before the next cage of flies is liberated for the second test, the chamber walls are wiped with a clean cloth saturated with rubbing alcohol containing 10 per cent acetone, and a new paper floor surface is exposed by turning or replacing the paper.

C. Assembling the Data

At the end of 24 hr. plus or minus 1 hr., the dead flies are removed from the cage and counted. Only flies that show no signs of life upon being touched may be counted as dead. The alive flies are killed by placing the cage in an oven at 170°F. for a few minutes; they are then removed and counted. The record of unparalyzed flies, dead flies, and alive flies gives the total flies in the test unit. The mortality is the percentage dead flies of total flies. Likewise, the knockdown is the percentage paralyzed flies of total flies.

IV. CONDITIONS FOR OFFICIAL EVALUATION

1. The tests shall be conducted in accordance with the procedure previously described.

2. An unknown insecticide to be officially rated should yield a knockdown not lower than the knockdown of the O.T.I. with a tolerance of (—) 2 percentage points.

3. Cages showing a natural mortality greater than 5 per cent on the day scheduled for testing shall not be used.

4. Evaluation of an unknown shall be based on the average difference between mortalities obtained with the O.T.I. and with the unknown sample, as determined by one comparison on each of three cultures. Each culture used in determining the evaluation must show an O.T.I. kill falling between 30 and 55 per cent. Replicated O.T.I. tests on one culture shall agree within 10 points.

5. The following example illustrates the order of testing and the computation of the evaluation:—
The order of testing shall be more or less random. The O.T.I. shall be replicated within each culture with the random order restricted to the first two and the last two tests in any series.

Culture	*E*		*F*		*G*	
Date	11/21		11/22		11/23	
Cage No.	*Sample*	*% Dead*	*Sample*	*% Dead*	*Sample*	*% Dead*
1	O.T.I.	36	Unknown B	55	O.T.I.	40
2	Unknown A	42	O.T.I.	46	Unknown F	54
3	Unknown C	32	Unknown C	32	Unknown E	58
4	Unknown B	50	Unknown F	55	Unknown A	46
5	Unknown E	65	Unknown A	46	Unknown C	30
6	Unknown D	55	Unknown D	60	Unknown D	58
7	Unknown F	48	Unknown E	70	O.T.I.	38
8	OT.I.	36	O.T.I.	44	Unknown B	55

	Culture Mortalities	*Average*	*Rating*	*Grade*
O.T.I.	36, 45, 39	40		
Unknown A	42, 46, 46	44.7	+ 4.7	B
Unknown B	50, 55, 55	53.3	+13.3	A
Unknown C	32, 32, 30	31.3	— 8.7	Below B
Unknown D	55, 60, 58	57.7	+17.7	AA
Unknown E	65, 70, 58	64.3	+24.3	AA
Unknown F	48, 55, 54	52.3	+12.3	A

THE SMALL GROUP PEET-GRADY METHOD

I. SCOPE

This method of test is a means of determining the relative efficiency of contact liquid insecticides used in the form of a spray. As a biological test, it is subject to variations which accompany the reaction of living organisms and should be employed under the supervision of a person familiar with the biological testing of insecticides. In order to measure with reasonable tolerances the relative position of different insecticides, the test is designed to be used in conjunction with the "Official Test Insecticide" as the basis of comparison. In this method the insecticides are tested against lots of 100 flies liberated from a stock cage. Ten paired tests of known and unknown samples are required to compensate certain biological variables.

II. APPARATUS

A. Rearing Room....
B. Testing Room.....
C. Peet-Grady Test Chamber.....

} As described under these sections of the Large Group Peet-Grady Method

D. Fly Cages

Two types of fly cages known as stock cages and observation cages are required. The stock cages may be of any convenient dimensions providing a volume of approximately 1½ cu. ft. Each cage shall have a solid floor, a large sliding glass door, and preferably shall be equipped with a sleeve opening. The top and two sides of the cage shall be covered with 16 mesh wire screening.

Not more than 1500 flies shall be confined per cubic foot of cage volume.

The observation cages shall be in the shape of an 8-in. cube. They shall have a solid floor, a sliding glass front, and the top and two sides shall be of 16 mesh wire screening. The back panel may be provided with a suitable aperture for inserting the hand into the cage. Rubber sheets with 2¾ in. openings fitted with fruit jar caps are recommended for the back panels.

E. Atomizer.....
F. Apparatus for Picking Up Flies.....
G. Exhaust Fan.....
H. Test Insect.....
I. Reference Insecticide.....
J. Insecticide Paper.....

} As described under these sections of the Large Group Peet-Grady Method

III. PROCEDURE

A. Raising and Handling of Flies

Three culture jars are prepared by filling cylindrical battery jars measuring approximately 6 in. in diameter by 9 in. high, three quarters full of the synthetic medium prepared as follows:

For 3 jars:

1200 g. soft wheat bran (coarse)
600 g. alfalfa meal

Mix together thoroughly, place in jars, and then add to each jar 900 cc. of a suspension consisting of:

2700 ml. water (lukewarm)
50 ml. malt extract
30 g. compressed yeast

Mix the suspension throughout the bran-alfalfa to give a loose mixture. The proportion of liquid ingredients to dry ingredients may be varied slightly to prevent mold growth.

Horse manure with added water, malt, and yeast may also be used as the rearing medium. The manure, which must be fresh, is preferably pasteurized for 2 hr. at 160-165°F. After the manure is cooled, it is shredded by means of an ice crusher, placed in battery jars and packed down, leaving the jars about two-thirds full. A malt and yeast suspension as described above is then added to the manure. The volume of suspension added may vary, but should be such as to maintain a slight excess of liquid in the bottom of the jar with a thin dry layer of medium on the top at the time of pupation.

The eggs used with either medium are deposited in the food dishes of cages containing flies between 4 and 7 days old and should be kept moist until placed in the culture jars. About 2000 eggs or sufficient to give 1500 to 1800 flies per jar are transferred from the moist cotton to the jars and placed about an inch below the surface of the medium within a few hours after the medium has been mixed. The number of eggs to use may be determined by gently shaking the eggs in water for a minute, allowing them to settle out and then estimating volumetrically from a calibrated tube. One-tenth ml. of settled eggs contains about 500 eggs.

When emergence starts, usually on the tenth day following preparation of the culture, any convenient means may be used for transferring the flies to the stock cages. Screen cones to fit the jars are recommended to conduct the insects directly into cages. As the males tend to emerge first and the females last, the middle two-thirds of the emergence is used to make up a stock cage. As an alternative procedure, the stock cage may be made up of the first and last equal portions of emergence from adjacent cultures that emerge on the same day. Approximately 1500 flies are placed in one cage.

The stock cages are held for 5 days, or until the first day of oviposition, at the temperature and humidity conditions prescribed for the rearing room. Each cage is supplied each morning with a 6-oz. dish containing 5 oz. of a 50 per cent dilution of milk with water, together with sufficient absorbent cotton to prevent flies from drowning. Water or other foods should not be used as certain foods have been found to affect both oviposition and susceptibility to the spray. On the day of testing the flies should be fed at least 3 hr. before spraying begins.

B. Test Procedure

When of proper age a group of approximately 100 flies from the stock cage is liberated in the thoroughly cleaned Peet-Grady chamber, the floor of which is covered with the specified gray bogus wrapping paper. All ports and entrances are closed, the windows are equally shaded, and a total of 12 ml. of insecticide is applied at 12.5 lb. pressure in approximately equal quantities through each spray hole, the atomizer being swung horizontally to distribute the spray to all parts of the chamber. The chamber is kept closed at an inside temperature of 85°±2° for 10 min. from the time spraying is started. At the end of 10 min. the ports are opened and the chamber is ventilated while the flies are being picked up and counted. The paralyzed flies are then transferred to the observation cage placed in the rearing room, supplied with a gauze wrapped ball of cotton saturated with 10 per cent sugar solution, and left for 24 hr.

The few unparalyzed flies in the chamber at the end of the 10-min. exposure period are counted and removed.

Before the next lot of 100 flies is liberated for the second test, the chamber walls are wiped with a clean cloth saturated with rubbing alcohol containing 10 per cent acetone, and a new paper floor surface is exposed by turning or replacing the paper.

C. Assembling the Data

At the end of the 10-min. exposure period, the number of paralyzed flies and unparalyzed flies is recorded. Twenty-four hours plus or minus 1 hr. later the dead flies are counted while in the observation cage. Only flies that show no signs of life upon being disturbed may be counted as dead. The mortality is the percentage dead flies of total flies. Likewise, the knockdown is the percentage paralyzed flies of total flies.

IV. CONDITIONS FOR OFFICIAL EVALUATION

1. The tests shall be conducted in accordance with the procedure previously described.

2. An unknown insecticide to be officially rated should yield a knockdown not lower than the knockdown of the O.T.I. with a tolerance of (—) 2 percentage points.

3. The average mortality for the O.T.I. in any series of tests shall lie between 30 and 55 per cent kill. It is desirable to have the O.T.I. kill between 35 and 45 per cent of the flies.

4. No more than two unknowns may be tested in conjunction with the O.T.I. in any one series. Ten tests of the O.T.I. and of each of the unknowns shall be made in parallel; i.e., test each sample of the series the same number of times with flies of the same batch, and test every sample of the series the same number of times during any one day. The three samples in a series should be

randomized in order of testing. For example, 1, 2, 3; 2, 3, 1; 3, 1, 2; etc., until thirty tests have been made. When only one unknown and the O.T.I. comprise the series, the order should likewise be randomized. For example, 1, 2; 2, 1; 2, 1; 1, 2; etc. until twenty tests have been completed. The groups of two or three samples should be run successively on 100 fly lots from a given stock cage. Nearly all flies in the cage should be used, the cage being discarded only when there are not sufficient flies left to test another group of two or three samples. As the males are usually liberated first, these provisions tend to equalize the numbers of each sex used.

5. The standard error the mean difference between the average O.T.I. kill and the average unknown kill must be less than 3. (See example under paragraph 6.) If it is 3 or greater, the differences between pairs were too variable and to make the results valid additional paired tests must be run to bring the standard error of the mean difference down to 3 or lower.

6. Calculate the mean difference between kill obtained with the unknown and that obtained with the O.T.I. Denote the difference between kills by the appropriate grade according to letter:—

Grade AA—excellent	+16 or higher
Grade A—good	+6 to +15
Grade B—equal to O.T.I.	−5 to +5

7. The following example illustrates the arrangement of tests and calculations described in the preceding paragraphs. When two unknowns and the O.T.I. are tested in series, the first table should consist of differences between No. 1 and the O.T.I., the second table should show differences between unknown No. 2 and the O.T.I. The method of calculation is shown in the sample below:

Mean difference equals 7.0; Standard error of MD =

$$\frac{\sqrt{\frac{\text{Sum d}}{n-1}}}{\sqrt{n}} = \frac{\sqrt{\frac{180}{9}}}{3.16} = 1.42$$

1.42 is less than 3, thus indicating the test has been properly conducted.

The letter n (in formula above) denotes the number of paired tests. This number is always 10 except when it is necessary to run additional tests to bring the standard error of the mean difference down to 3 or less.

The unknown in the example above tests 7 points better than the O.T.I.; therefore, unknown No. 1 is an "A" grade insecticide.

Pair	*Date*	*Batch*	*Unknown No. 1 % Kill*	*O.T.I. % Kill*	*Difference*	*Deviation from Mean Difference*	*Deviation Squared*
1	12/8	12/3	58	49	+9	+2	4
2	12/8	12/3	62	50	+12	+5	25
3	12/8	12/3	50	47	+3	−4	16
4	12/9	12/4	52	46	+6	−1	1
5	12/9	12/4	60	52	+8	+1	1
6	12/9	12/4	65	50	+15	+8	64
7	12/10	12/5	54	48	+6	−1	1
8	12/10	12/5	56	57	−1	−8	64
9	12/10	12/5	51	44	+7	+0	0
10	12/10	12/5	57	52	+5	−2	4
			56.5M	49.5M	7.0MD	0	180 sum d²

F.D.A. Method

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APPROXIMATE CONSTANTS OF SOAP OILS

Oil or Fat	Sp. Gr. (Water at 15°)	Sap. No.	Iodine Value	Titer °C.	% Non-Sap.
Castor Oil	0.958—0.968	177—187	83— 86	3°—	0.3—0.5%
Coconut Oil	0.926	251—263	8— 10	20°—23°	0.2
Corn Oil	0.921—0.927	186—193	120—130	15°—19°	1.5—3.0%
Cottonseed Oil	0.915—0.926	191—196	103—115	32°—38°	0.7—1.6%
Linseed Oil	0.931—0.938	189—196	170—204	19°—21°	0.5—1.6%
Olive Oil Foots	0.914—0.919	189—195	79— 86	17°—21°	2.0—3.0%
Palm Oil	0.921—0.925	196—205	48— 58	42°—45°	0.7—1.0%
Palm Kernel Oil	0.873/99°	244—255	16— 23	20°—25°	0.2—0.5%
Peanut Oil	0.911—0.926	185—192	83— 95	28°—30°	0.5—1.0%
Sesame Oil	0.920—0.926	188—193	103—115	21°—24°	1.0—1.8%
Soya Bean Oil	0.922—0.925	191—194	125—140	21°—24°	0.3—0.6%
Tallow (beef)	0.943—0.952	193—200	35— 47	43°—45°	
Whale Oil	0.922—0.926	188—194	110—150	22°—24°	1.0—3.0%

FATTY ACIDS IN SOAP OILS

Glycerides of Acids	Coconut Oil	Corn Oil	Cottonseed Oil	Linseed Oil	Olive Oil	Palm Oil	Palm Kernel Oil	Peanut Oil	Sesame Oil	Soyabean Oil	Tallow	Whale Oil
Arachidic	—	0.4	0.6	—	0.2	—	—	3.6	4.0	0.7	—	—
Lignoceric	—	0.2	—	—	—	0.1	—	2.9	0.4	0.1	—	—
Linolenic	—	—	—	34.1	—	—	—	—	—	2.2	—	—
Linoleic	—	39.1	42.0	48.5	3.9	9.5	1.0	23.1	35.2	49.3	—	20.0
Myristic	20.0	—	0.4	—	Trace	0.6	16.0	—	—	—	2.0	8.0
Oleic	2.0	43.4	35.0	5.0	83.1	43.2	16.5	56.7	46.0	32.0	44.5	25.0
Palmitic	7.0	7.3	20.0	2.7	9.2	44.0	6.5	7.3	7.3	6.5	29.0	12.0
Palmitoleic	—	—	—	—	—	—	—	—	—	—	—	17.0
Stearic	5.0	3.3	2.0	5.4	2.0	2.9	1.0	5.5	4.4	4.2	24.5	—

Coconut oil also contains 10% Capric, 2% Caproic, 9% Caprylic and 45% Lauric. Palm Kernel Oil contains 6% Capric, 3% Caprylic and 50% Lauric. Whale Oil contains 18% Clupandonic.

Comparative Values of Caustic Soda Solutions

% NaOH	% Na_2O	Be 60° F.	Tw. 60° F.	Sp. Gr. 60° F. @ 60° F.	% NaOH	% Na_2O	Be 60° F.	Tw. 60° F.	Sp. Gr. 60° F. @ 60° F.
1	.77	1.6	2.2	1.011	26	20.18	32.4	57.6	1.288
2	1.55	3.1	4.4	1.022	27	20.95	33.4	59.4	1.299
3	2.32	4.6	6.6	1.033	28	21.70	34.3	62.0	1.310
4	3.10	6.3	9.0	1.045	29	22.40	35.2	64.0	1.320
5	3.88	7.7	11.2	1.056	30	23.15	36.1	66.2	1.331
6	4.65	9.1	13.4	1.067	31	24.00	36.9	68.2	1.341
7	5.39	10.5	15.6	1.078	32	24.80	37.8	70.4	1.352
8	6.20	11.9	17.8	1.089	33	25.60	38.6	72.4	1.362
9	6.98	13.2	20.0	1.100	34	26.38	39.4	74.6	1.373
10	7.75	14.5	22.2	1.111	35	27.15	40.2	76.6	1.383
11	8.53	15.8	24.4	1.122	36	27.90	40.9	78.6	1.393
12	9.30	17.1	26.6	1.133	37	28.70	41.7	80.6	1.403
13	10.09	18.3	28.8	1.144	38	29.45	42.4	82.6	1.413
14	10.85	19.5	31.0	1.155	39	30.22	43.1	84.6	1.423
15	11.62	20.7	33.4	1.167	40	31.00	43.8	86.6	1.433
16	12.40	21.9	35.6	1.178	41	31.80	44.5	88.6	1.443
17	13.20	23.1	37.8	1.189	42	32.60	45.2	90.6	1.453
18	13.98	24.2	40.0	1.200	43	33.35	45.9	92.6	1.463
19	14.72	25.2	42.0	1.210	44	34.10	46.5	94.4	1.472
20	15.50	26.3	44.2	1.221	45	34.90	47.1	96.2	1.481
21	16.30	27.4	46.6	1.233	46	35.66	47.8	98.2	1.491
22	17.08	28.5	48.8	1.244	47	36.45	48.4	100.2	1.501
23	17.85	29.5	51.0	1.255	48	37.22	49.0	102.0	1.510
24	18.60	30.5	53.2	1.266	49	37.99	49.6	104.0	1.520
25	19.40	31.5	55.4	1.277	50	38.75	50.2	105.8	1.529

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Water Hardness Statistics

Approximate Average Hardness (as $CaCO_3$) of Larger Public Water Supplies in the United States, 1932

Place	Population supplied (thousands)	Hardness (parts per million)
Akron, Ohio	225	*100
Atlanta, Ga.	270	14
Baltimore, Md.	805	54
Birmingham, Ala.	305	*67
Boston, Mass. (Met. Dist.)	1,385	15
Bridgeport, Conn.	185	15
Buffalo, N. Y.	573	118
Chicago, Ill.	3,679	125
Cincinnati, Ohio	451	*110
Cleveland, Ohio	1,200	120
Columbus, Ohio	291	*84
Dallas, Tex.	260	*69
Dayton, Ohio	201	368
Denver, Colo.	288	*121
Detroit, Mich.	1,798	97
Flint, Mich.	156	*298
Grand Rapids, Mich.	169	*123
Hartford, Conn.	208	17
Houston, Tex.	292	**85
Indianapolis, Ind.	364	
White River		280
Wells		316
Jersey City, N. J.	404	55
Kansas City, Mo.	419	*221
Los Angeles, Calif.	1,238	
Owens River		*140
Los Angeles River		*205
Louisville, Ky.	308	*110
Memphis, Tenn.	253	39
Milwaukee, Wis.	652	126
Minneapolis, Minn.	464	*172
Nashville, Tenn.	154	*80
Newark, N. J.	1,045	29
Pequannock Supply		
Wanaque Res. (No. Jersey Dis.)		50
New Haven, Conn.	242	
Lake Whitney		69
Lake Dawson		22
Lake Gaillard		48
New Orleans, La.	450	*72
New York, N. Y.	6,930	
Catskill suply		20
Croton supply		51
Ridgewood supply.		*70
Oakland, Calif.	457	**70
Okla. City, Okla.	185	*121
Omaha, Neb.	214	*251
Philadelphia, Pa.	1,951	
Delaware River		69
Schuylkill River		*120
Phila, Suburban District Pa.	315	62
Pittsburgh, Pa.	985	*90
Portland, Ore.	302	8
Providence, R. I.	314	32
Richmond, Va.	183	*56
Rochester, N. Y.	382	
Hemlock Lake		75
Lake Ontario		105
St. Louis, Mo.	822	*83
St. Paul, Minn.	272	160
San Antonio, Tex.	232	221
San Francisco, Calif.	634	**150
Scranton, Pa.	214	**30
Seattle, Wash.	366	21
Syracuse, N. Y.	209	113
Toledo, Ohio	291	*253
Washington, D. C.	503	*93
Worcester, Mass.	195	11
Youngstown, Ohio	186	81
Total	35,048	

*Varies over a wide range. **Estimated.

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